

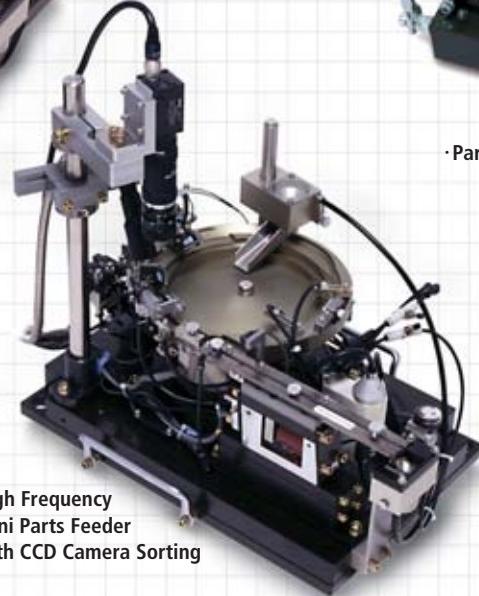
Examples of equipment layouts for different types of workpiece



· High Frequency
Mini Parts Feeder
Space-saving Design



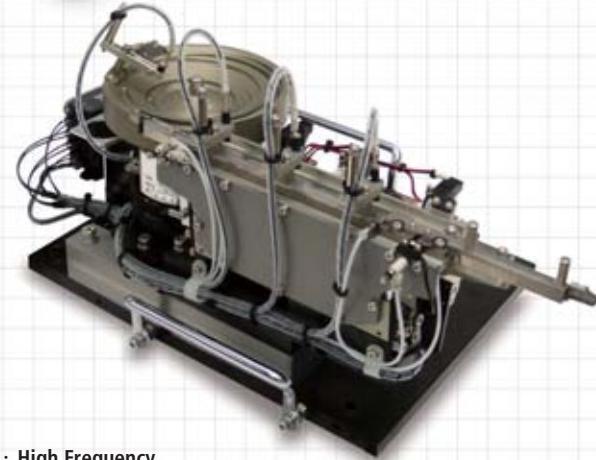
· Parts Feeder for Ultra Thin Material



· High Frequency
Mini Parts Feeder
with CCD Camera Sorting



· HSE Series
High Frequency Mini Parts Feeder



· High Frequency
Mini Parts Feeder for Micro-sized Workpiece
/ High Speed Feeding

⚠ For safe and reliable operation, it is essential to read the user's manual carefully before using this equipment.

Company name changed from SHINKO ELECTRIC CO., LTD. as of April 2009.

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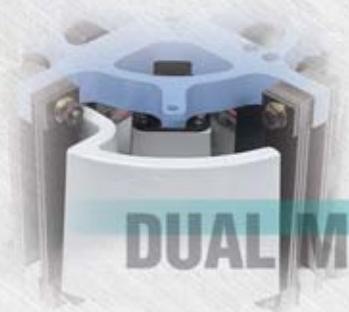
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SINFONIA TECHNOLOGY CO., LTD. continually upgrades and
improves its products. Actual features and specifications may therefore
differ slightly from those described in this catalog.

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DUAL MOTION PARTS FEEDER

PARTS FEEDER



PARTS FEEDER



LINEAR FEEDER

CONTROLLER



MINI PARTS FEEDER

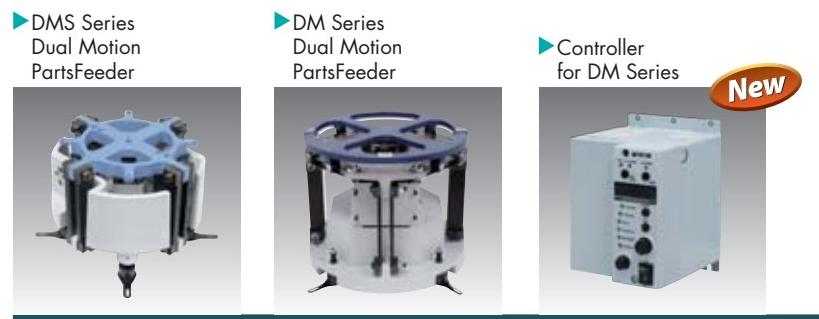
HOPPER



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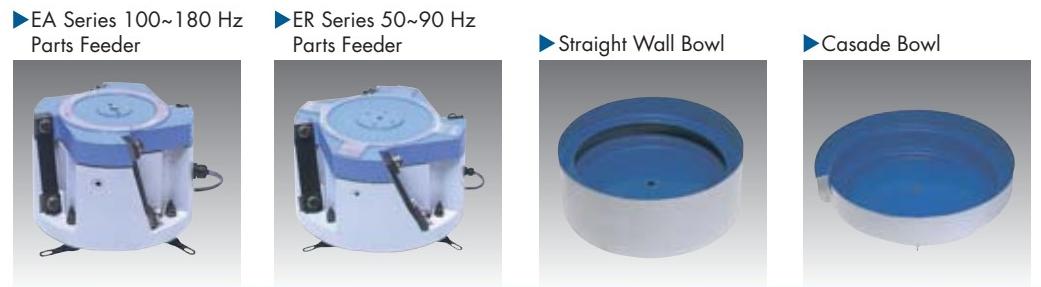
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Please note that our former company name or logo may be printed in this catalog.

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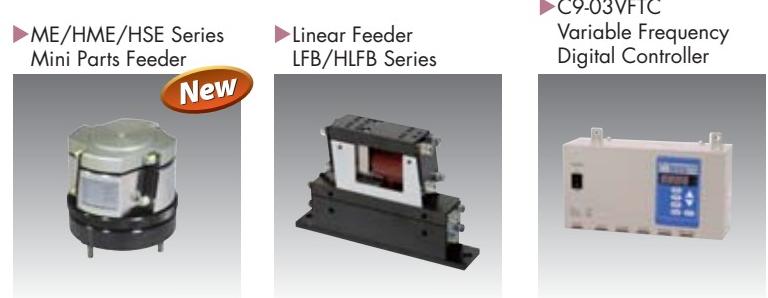
HOPPER

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DUAL MOTION PARTS FEEDERS

Smooth, low-noise conveyance

Features

- Setting vertical amplitude at the lowest possible setting greatly reduces bouncing of workpieces. Thin, flat workpieces remain separate and are conveyed smoothly.
- Work is conveyed as though gliding, with minimal impact between workpieces and track, resulting in minimal noise.
- Compact size makes it possible to interchange them with EA/ER Series parts feeders or those of other manufacturers. (DMS Series)
- A single drive unit can be used for right or left bowl orientation.

Applications

- Plastic, easily damaged workpieces for medical and electronic equipment
- Low-noise conveyance of auto and other metal parts
- Precision equipment and other electronic parts that require highly accurate sorting



DMS Series	interchangeable with EA/ER Series parts feeders or those of other manufacturers.
DM Series	Accommodates high-speed delivery requirements.



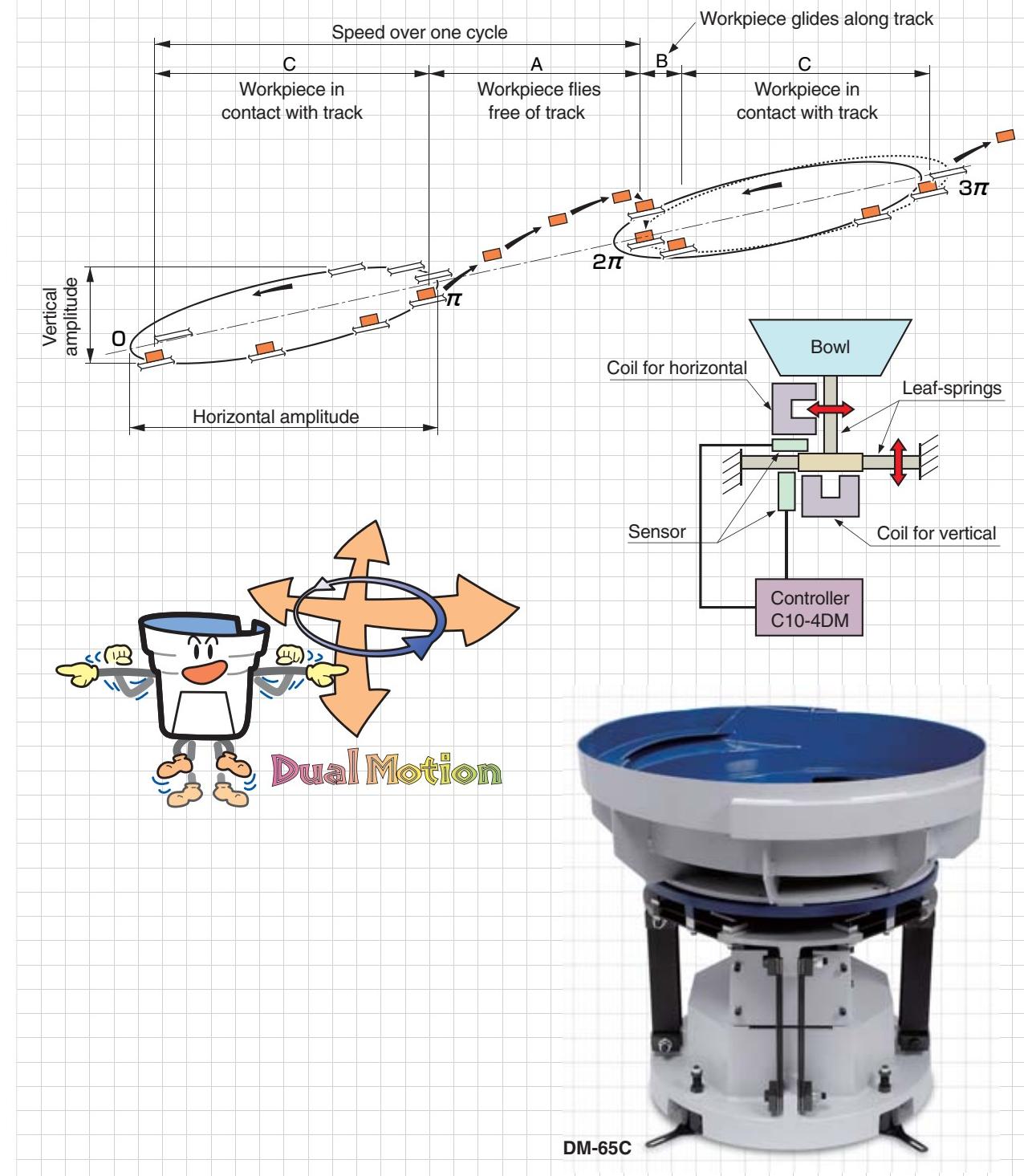
Dual Motion Principle

Friction (conveyance) controlled through elliptical vibration

Elliptical vibration is achieved by controlling optimal phase difference to the horizontal and vertical amplitudes of bowl vibration. Conveyance using elliptical vibration results from controlling friction, and workpieces thus travel as though gliding along the track.

Dual Motion in action

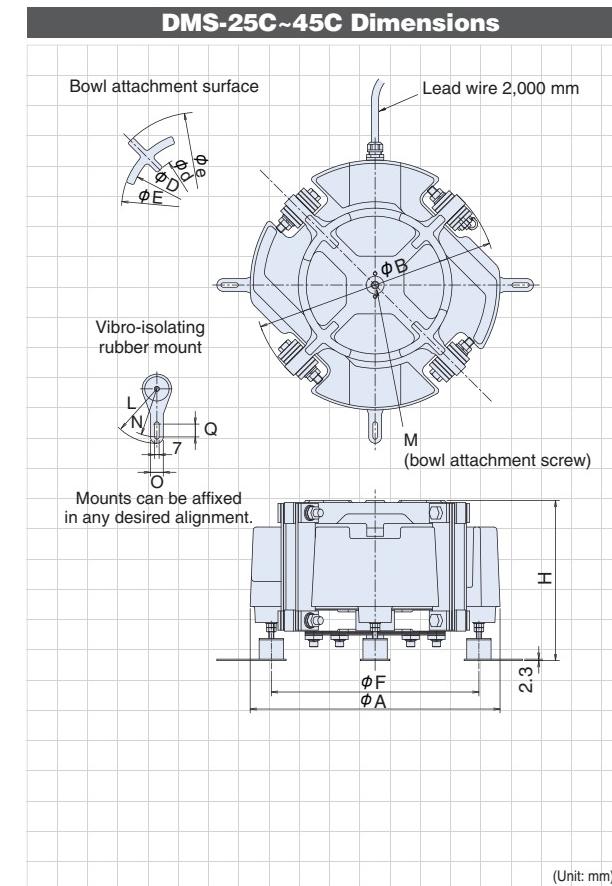
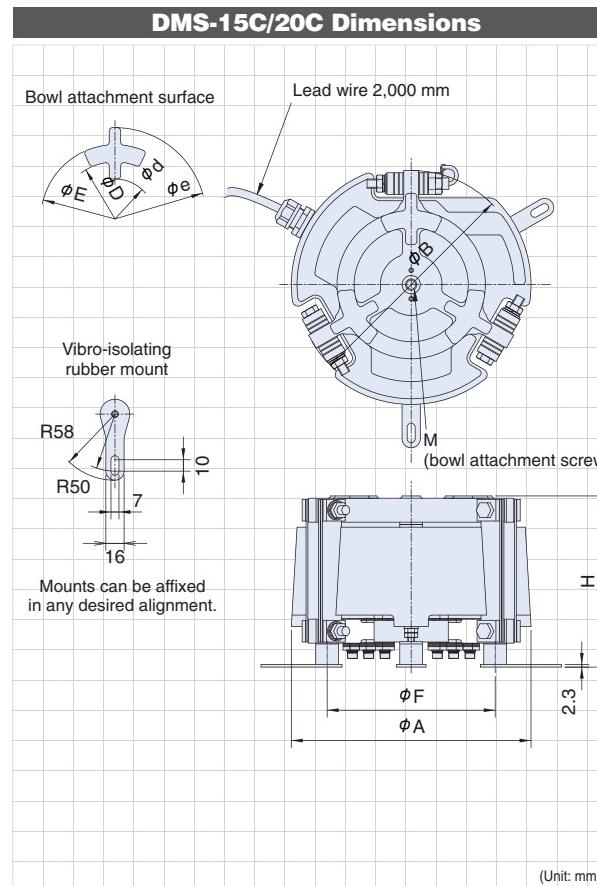
Dual motion is generated in these parts feeders through feedback of vibration in the horizontal and vertical directions, as shown in the diagram. Sensors detect horizontal and vertical amplitude, thereby allowing separate control.



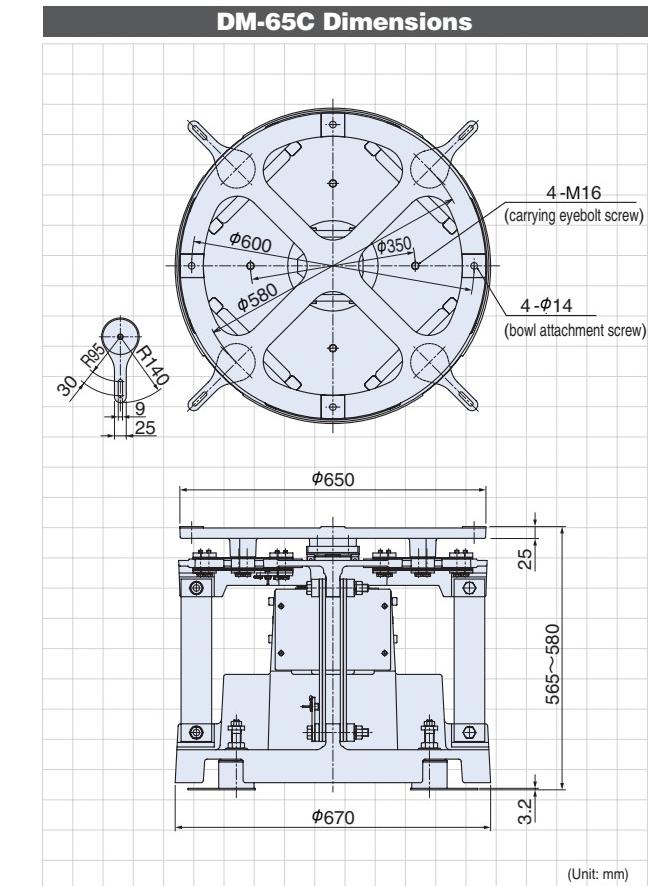
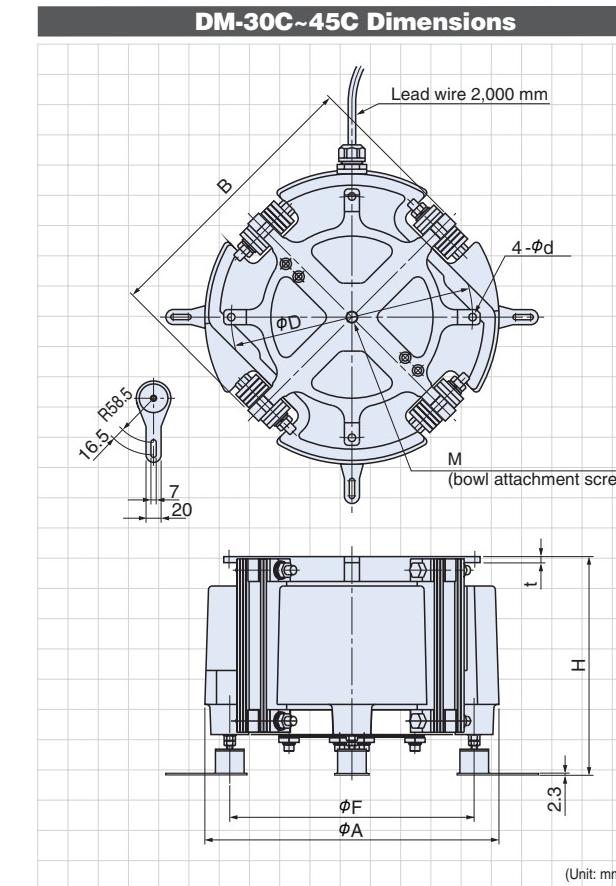
DMS series Drive Units

DM series Drive Units

Accommodates bowls designed for EA and ER and DMS series (see p13-14)



Can be used with DM series bowls only (see p7)



Drive Unit Specifications

Model	DMS-15C	DMS-20C	DMS-25C	DMS-30C	DMS-38C	DMS-45C
Drive unit outer diameter	mm	φ160	φ210	φ260	φ310	φ460
Drive unit height	mm	130	150	185	220	265
Drive unit weight	kg	7	14	25	40	110
Rated voltage	V			200		
Rated current	A	Horizontal: 0.15 Vertical: 0.15	0.25	0.6	2.0	2.0
Vibration frequency	Hz	100~180		70~110		
Unprocessed bowl diameter (cylindrical)	mm	φ150	φ200	φ250	φ300	φ375
Max. bowl diameter (cylindrical)	mm	φ250	φ320	φ400	φ500	φ600
Max. amplitude (Unprocessed cylindrical bowl periphery)	mm	Horizontal: 0.6 Vertical: 0.13			1.0 0.3	
Max. loaded weight (workpieces + bowl weight)	kg	2.3	4	8	12.5	17
Lead wire		5 x 0.5 mm ² wire		5 x 0.75 mm ² wire		
Applicable controller			C10-4DM			

Dimensions Chart

Model	H	φA	φB	M	φD	φE	φF	φd	φe	Unit: mm			
DMS-15C	127~130~133	160	150	M8	72	94	130	50	120				
DMS-20C	147~150~153	210	200	M10	100	130	170	70	160				
Model	H	φA	φB	M	φF	L	N	O	Q	φD	φE	φd	φe
DMS-25C	182~185~188	260	250	M12	216	58	50	16	10	140	160	100	200
DMS-30C	215~220~225	310	300	M12	252	85	75	20	20	172	192	140	240
DMS-38C	245~250~255	390	380	M16	324	85	75	20	20	215	240	170	300
DMS-45C	260~265~270	460	450	M16	390	85	75	20	20	270	300	210	350

Drive Unit Specifications

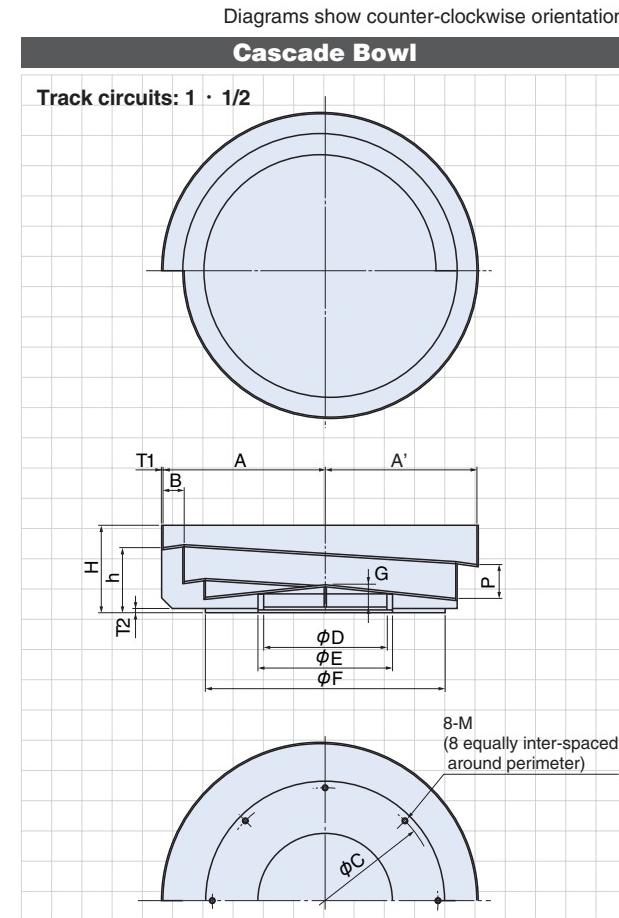
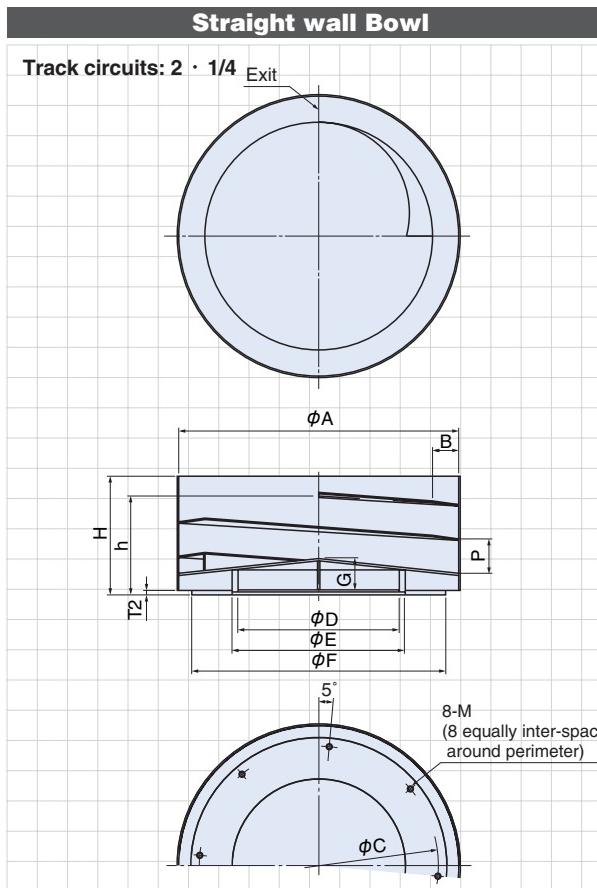
Model	DM-30C	DM-38C	DM-45C	DM-65C
Drive unit outer diameter	mm	φ310	φ390	φ460
Drive unit height	mm	285~295	290~300	360~370
Drive unit weight	kg	55	80	140
Rated voltage	V		200	
Rated current	A	Horizontal: 2.0 Vertical: 0.8	2.0 0.8	4.0 2.0
Vibration frequency	Hz	70~110		30~40
Unprocessed bowl diameter (cylindrical)	mm	φ300	φ375	φ450
Max. bowl diameter (cylindrical)	mm	φ500	φ600	φ700
Max. amplitude (Unprocessed cylindrical bowl periphery)	mm	Horizontal: 1.8 Vertical: 0.3	2.0 0.3	4.0 1.0
Max. loaded weight	kg	9.2	17.0	27.5
Lead wire			5 x 1.25 mm ² wire	
Applicable controller		C10-4DM		

Dimensions Chart

Model	H	φA	B	M	φD	φd	t	φF	Unit: mm
DM-30C	285~295	310	290	M12	270	10	8	252	
DM-38C	290~300	390	370	M16	320	10	8	324	
DM-45C	360~370	460	440	M16	365	12	10	390	

DM series Bowl Dimensions

DM series Controller C10-4DM



Straight wall Bowl Dimensions Chart

Model	ϕA	B	ϕC	ϕD	ϕE	ϕF	G	H	h	M	P	T2	Approx. weight (kg)	Capacity (t)
DM-30C	300	25	270	174.7	190.7	290	40	129	105	M8	36	6	6.5	0.8
DM-38C	375	35	320	216	232	340	48	159	133	M8	46	6	10.0	1.7
DM-45C	450	40	365	282.5	298.5	390	60	197	163	M10	56	9	18.0	3.0
DM-65C	650	65	600	363.6	406.4	630	-	302	249.5	M12	90	12	54.0	10.0

Cascade Bowl Dimensions Chart

Model	A	A'	B	ϕC	ϕD	ϕE	ϕF	G	H	h	M	P	T1	T2	Approx. weight (kg)	Capacity (t)
DM-30C	180	167.5	25	270	143	159	290	32	99	74	M8	38	2	6	5.5	1.6
DM-38C	230	215	30	320	174.7	190.7	340	40	124	92	M8	48	2	6	8.5	3.5
DM-45C	280	260	40	365	216	232	390	51	157	116	M10	58	2	9	13.5	6.0
DM-65C	445	405	80	600	363.6	406.4	630	-	267	197	M12	100	3	12	52.0	18.0

Notes: *1 Bowls are made of stainless steel.

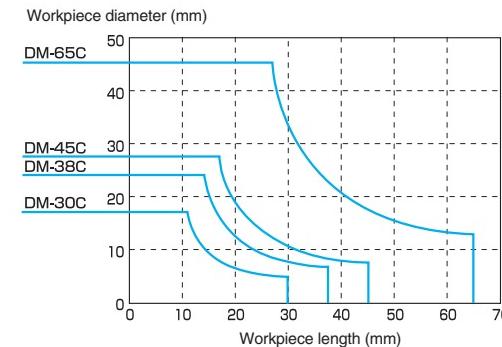
*2 Bowls available with clockwise or counter-clockwise orientation.

*3 Charged capacity varies according to the type of workpiece.

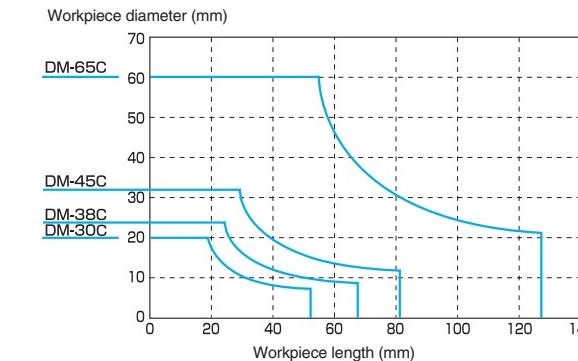
*4 When supplied unprocessed, neither inside nor outside has been surface-treated.

*5 When supplying processed, specialized bowls other than standard bowls above can be manufactured.

Straight wall Bowl Selection Guide



Cascade Bowl Selection Guide



Features

•Simple and easy start up

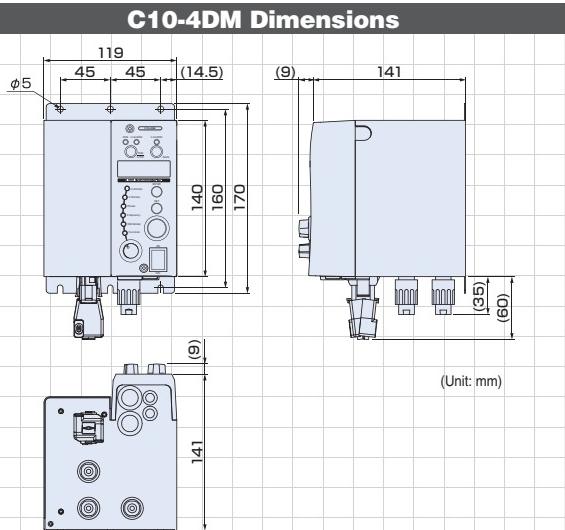
Stroke sensor gain adjustment is not required. Just by selecting a drive unit model at the initial setting stage, necessary parameters are set automatically.

•Easy operation

'Selection Dial' and 'Setting Encoder' allow for easy operation for anyone.

•Save more space

This controller has the same dimensions as C10-5VF/5VFEF and the footprint is reduced by 36% from the previous model.



•Energy-saving auto-tuning

Auto tuning function reduces power consumption by tracking the resonance point and keeping vibration frequency on it continuously.

•Electronic control gives optimal vibration

Electronic control of horizontal/vertical amplitudes and phase difference provides ideal vibration characteristics for any type of workpiece.

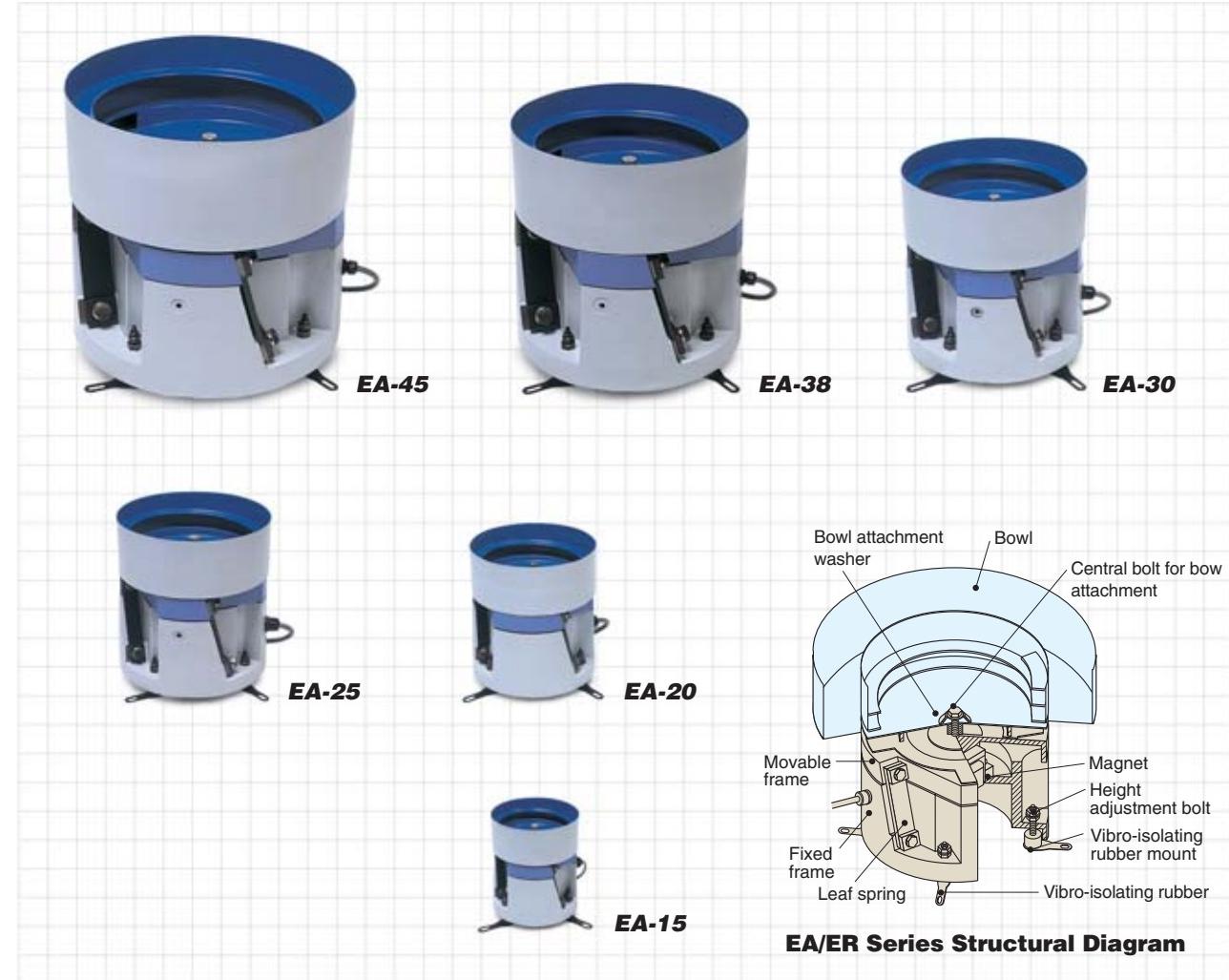
Specifications

Model	C10-4DM	
Input power	AC200/230V 10%, 50/60Hz	
Output	Control system	PWM system
	Voltage	V 0~190
	Vibration frequency	Hz 28~45 65~120 90~180
	Max. current	A horizontal: 4 vertical: 2
	Auto resonance-point-tuning control	Automatic tuning to horizontal resonance point. Accuracy: resonant frequency 0.3%
	Constant phase difference control	Horizontal/vertical amplitude phase difference kept constant
	Constant amplitude control	Horizontal/vertical amplitudes kept constant
	Display function	Shows output frequency, horizontal/vertical amplitudes, phase difference, and function codes
Additional features	Setting function	For setting horizontal/vertical amplitudes and phase difference
	Speed selection	Choice of 4 pre-set speeds by external signal
	Start/Stop control	Stops and starts by external signal
	Output signal	Outputs signal tuned to unit operation
	Soft start	Start-up time 0.2~4.0 seconds
	On/Off delay timer	Delay time 0.2~60 seconds
	Sensor power source	3P power plug gives DC12V, max. 80 A
Synchronized power source	Function	Power source synchronized to parts feeder operation (RUN)
	Control system	On/Off control through Triac
	Output voltage	As power source input to controller
	Maximum current	A 2
	Noise resistant voltage	V Above 1000
	Ambient temperature range	degree 0~40°C
	Ambient humidity range	% 10~90% (no condensation)
	Color of case	Japan Paint Industry Association U75-70D
	Weight	kg 2.0
Other	Compatible equipment	DM-30C, 38C, 45C, 65C DMS-15C, 20C, 25C, 30C, 38C, 45C

EA series 100~180Hz

For handling a wide range of very small, precision workpieces

With high vibration frequencies of 100 to 180 Hz and small amplitude of 0.6 mm, this series is ideal for very small (10 mm or less), high precision or ultra thin workpieces. Can accommodate bowls ranging from 150 to 700 mm in diameter for highly reliable conveyance.



ER series 50~90Hz

Steady delivery of workpieces of all sizes

With low vibration frequencies of 50 to 90Hz and a large amplitude of 1.2 mm, this series is suited to workpieces from 10 mm up in size. Bowl diameters from 250 to 1100 mm can be accommodated, to give powerful feeder performance.



Specifications

Model	EA-15	EA-20	EA-25	EA-30	EA-38	EA-45	
Drive unit outer diameter	mm	φ165	φ210	φ260	φ310	φ390	φ460
Drive unit height	mm	133	155	190	220	260	280
Drive unit weight	kg	8.5	17	30	48	80	115
Leaf-spring attachment angle	degree				15		
Rated voltage	V				200 (*1)		
Rated current	A	0.4	0.8	1.5	2.0	2.5	3.0
Vibration frequency	Hz				100~180		
Unprocessed bowl diameter (cylindrical)	mm	150	200	250	300	375	450
Max. bowl diameter (cylindrical)	mm	250	320	400	500	600	700
Max. amplitude (periphery of standard cylindrical bowl)	mm			0.6		0.8	
Max. loaded weight (workpieces + bowl weight)	kg	2.3	4	8	12.5	17	26
Power cable	mm ²	0.5	0.75	0.75	0.75	1.25	1.25
Compatible controllers (*2)	AC200V	Single	C10-1VF/1VFEF		C10-3VF/3VFEF		
		Twin		C9-3VFT-2C			
AC100V	Single	C10-1VF/1VFEF+C10-TR		C10-3VF/3VFEF+C10-TR			
		Twin		C9-3VFT-1C			

Notes *1 With an AC100V power source, use C10-TR transformer (sold separately).

*2 Standard controller is AC200V single type

Specifications

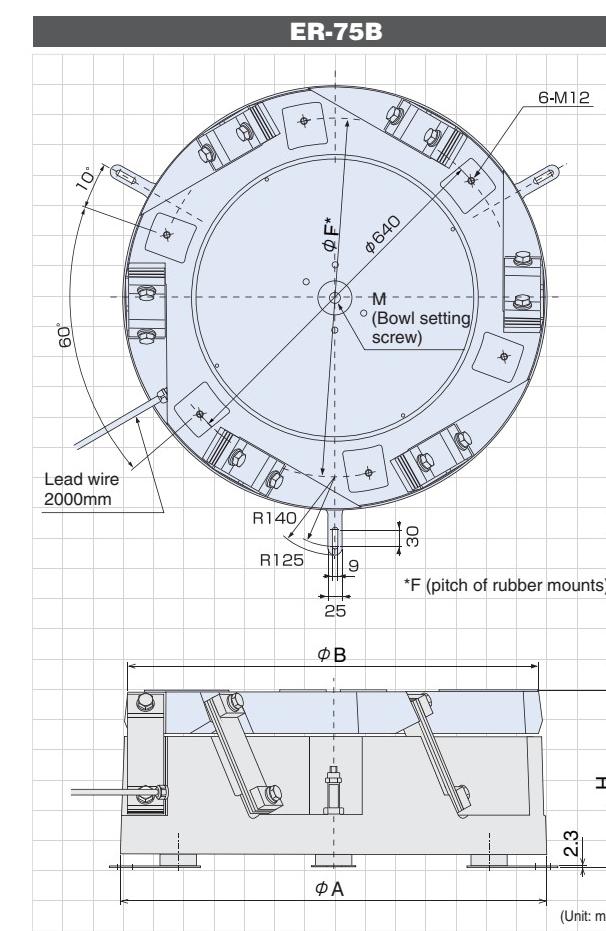
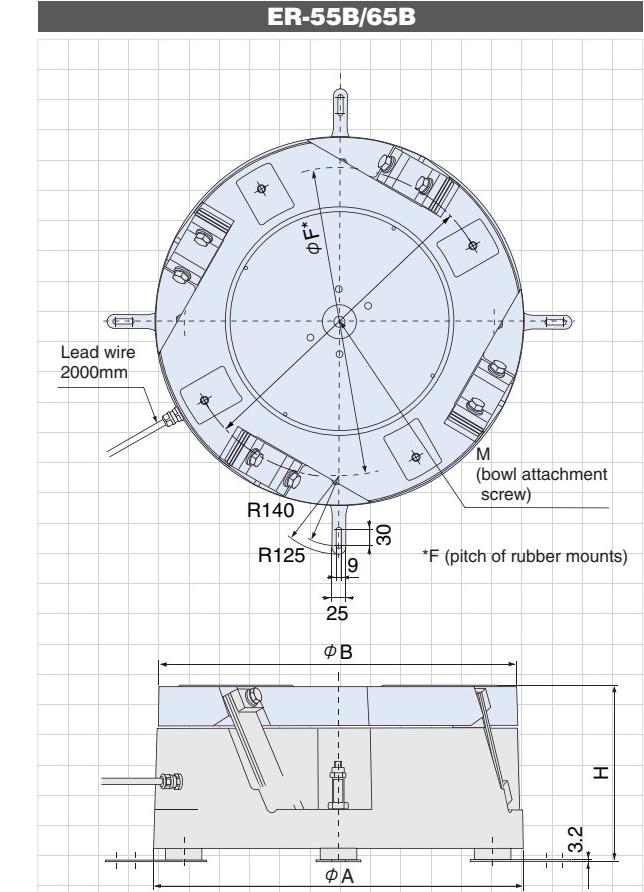
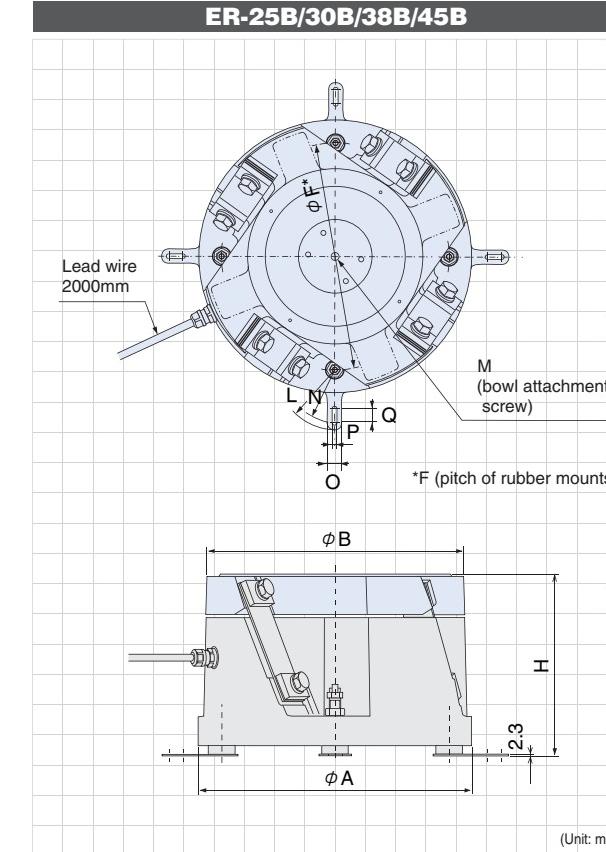
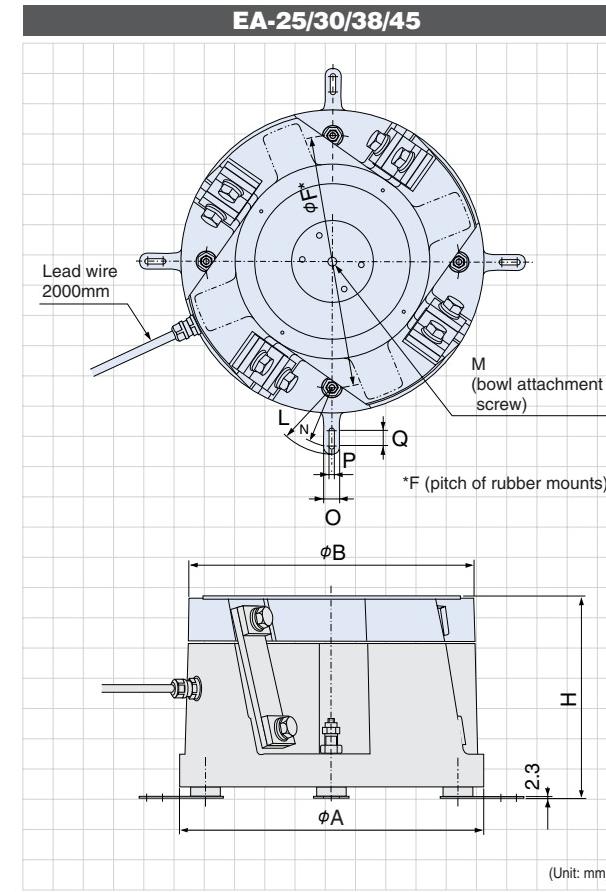
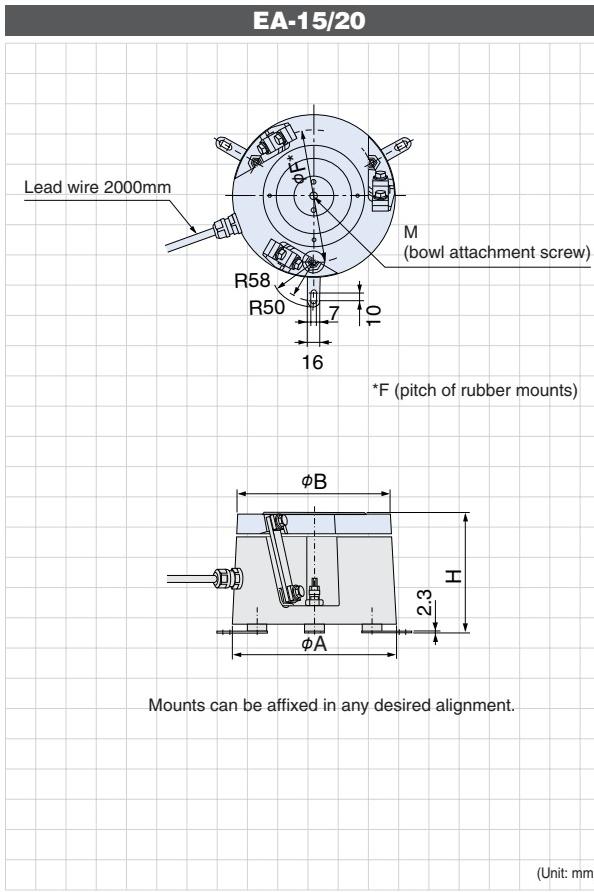
Model	ER-25B	ER-30B	ER-38B	ER-45B	ER-55B	ER-65B	ER-75B	
Drive unit outer diameter	mm	φ260	φ310	φ390	φ460	φ560	φ660	φ760
Drive unit height	mm	198	225	264	286	321	321	321
Drive unit weight	kg	30	48	80	115	160	200	260
Leaf-spring attachment angle	degree				20			
Rated voltage	V				200 (*1)			
Rated current	A	1.0	1.5	2.0	2.5	5.0	5.0	5.0
Vibration frequency	Hz				50~90			
Unprocessed bowl diameter (cylindrical)	mm	250	300	375	450	550	650	750
Max. bowl diameter (cylindrical)	mm	400	500	600	700	820	970	1100
Max. amplitude (periphery of standard cylindrical bowl)	mm			1.2		1.4		
Max. loaded weight (workpieces + bowl weight)	kg	8	12.5	17	26	70	85	120
Power cable	mm ²	0.75	0.75	1.25	1.25	2.0	2.0	2.0
Compatible controllers (*2)	AC200V	Single	C10-1VF/1VFEF		C10-3VF/3VFEF		C10-5VF/5VFEF	
		Twin		C9-3VFT-2C			—	
AC100V	Single	*3	C10-3VF/3VFEF+C10-TR			—		
		Twin		C9-3VFT-1C		—		

Notes *1 With an AC100V power source, use C10-TR transformer (sold separately).

*2 Standard controller is AC200V single type

*3 C10-1VF/1VFEF+C10-TR

Dimension EA/ER series

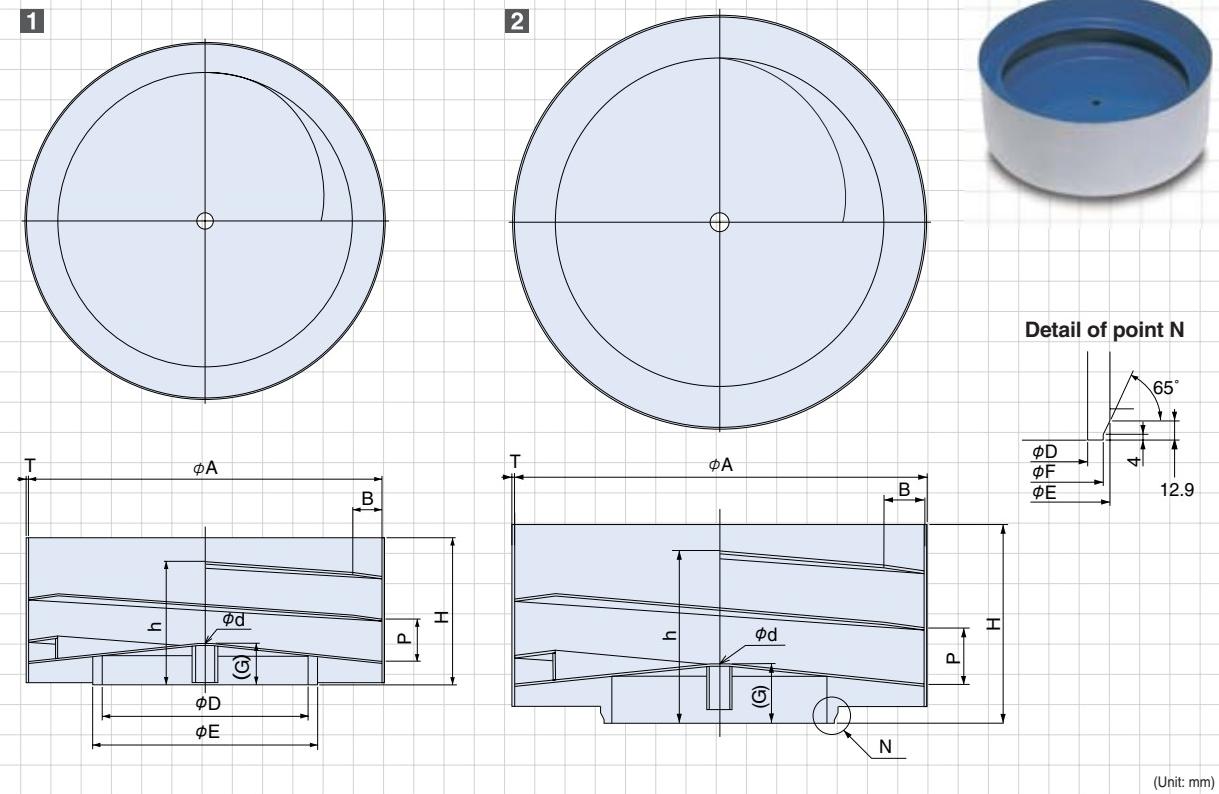


Model	H	ϕA	ϕB	M	ϕF	L	N	O	P	Q
ER-25B	194-198-202	260	250	M12	216	58	50	16	7	10
ER-30B	218-225-232	310	300	M12	252	85	75	20	7	20
ER-38B	257-264-271	390	375	M16	324	85	75	20	7	20
ER-45B	280-286-292	460	450	M16	390	85	75	20	7	20
ER-55B	312-321-330	560	550	M20	450					
ER-65B	312-321-330	660	650	M20	550					
ER-75B	312-321-330	760	750	M20	640					

Bowl Dimension EA/ER/DMS series

Straight Wall Bowls (Diagrams show counter-clockwise orientation)

Track circuits: 2 · 1/4



Model	ϕA	B	ϕD	ϕE	G	H	P	h	ϕd	T	Unit: mm	Capacity (ℓ)
											Approx. Weight (kg)	
EA/DMS-15	150	12	73.1	89.1	22	70	18	56	8.2	1.5	1.1	0.1
EA/DMS-20	200	18	104	120	25	85	24	69	10.2	1.5	1.8	0.2
EA/ER/DMS-25	250	20	143	159	27	100	30	83	12.2	2	3.2	0.5
EA/ER/DMS-30	300	25	174.7	190.7	35	125	36	101	12.2	2	5.0	0.8
EA/ER/DMS-38	375	35	216	232	43	155	46	129	16.2	2	8.0	1.7
EA/ER/DMS-45	450	40	282.5	298.5	52	190	56	156	16.2	3	15.0	3.0

Model	ϕA	B	ϕD	ϕE	ϕF	G	H	P	h	ϕd	T	Unit: mm	Capacity (ℓ)
												Approx. Weight (kg)	
ER-55B	550	55	288.5	318.5	309.2	78	266	76	221	25	3	28	5
ER-65B	650	65	373	406.4	397.2	88	311	90	258	25	3	39	10
ER-75B	750	75	477.8	508	498.7	99	366	108	303	25	3	54	15

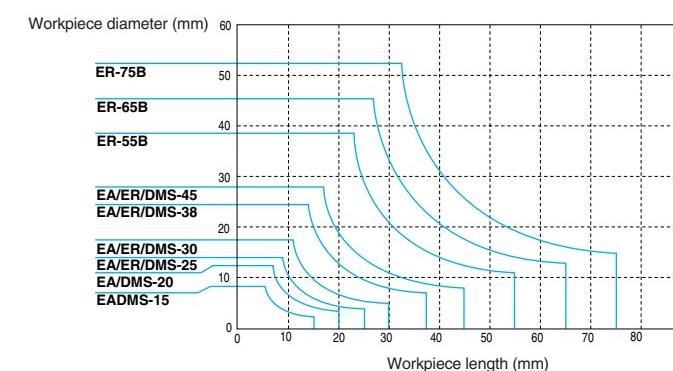
Notes 1) Bowls are made of stainless steel.

2) Bowls available with clockwise or counter-clockwise orientation.

3) Capacity varies according to the type of workpiece.

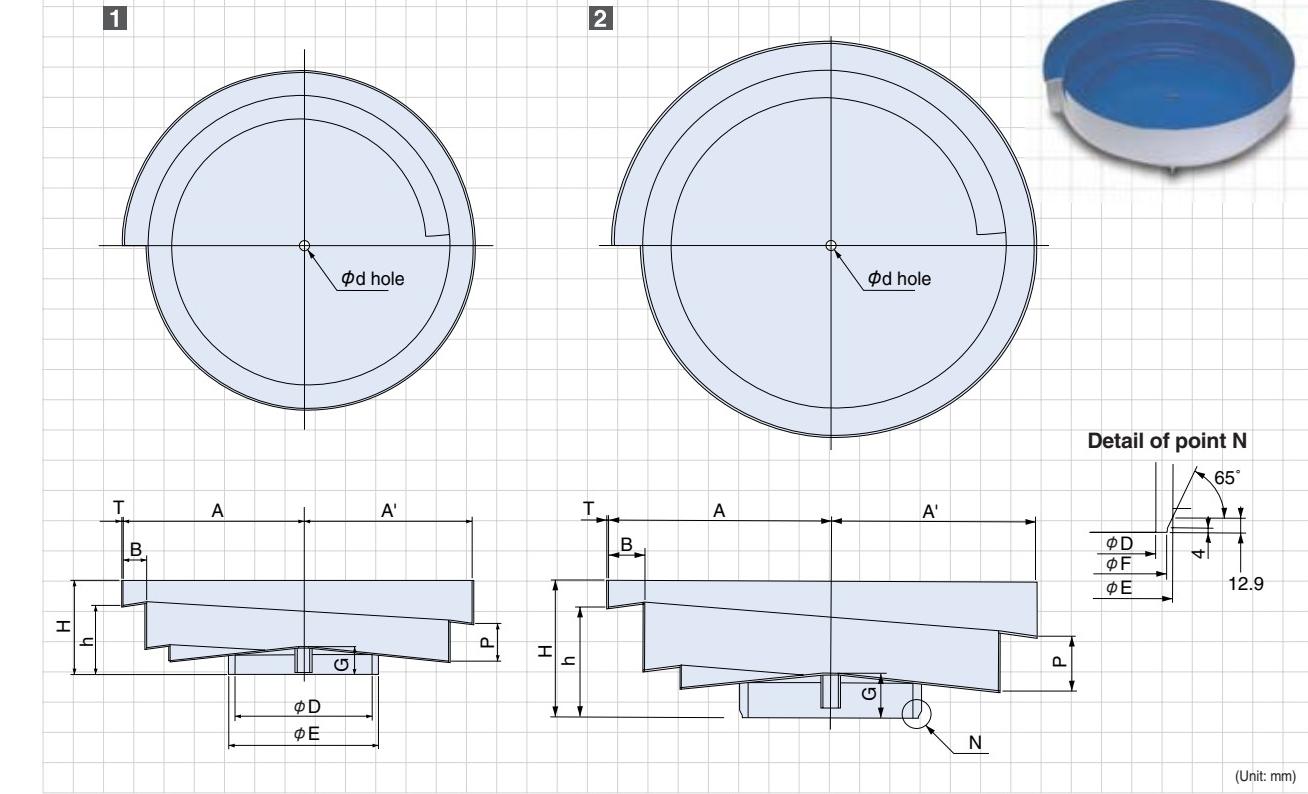
*When supplied unprocessed, neither inside nor outside has been surface-treated.

Straight wall Bowl Selection Guide



Cascade Bowls (Diagrams show counter-clockwise orientation)

Track circuits: 1 · 1/2



Model	Dia. approx.	A	A'	B	H	h	P	ϕd	ϕD	ϕE	G	T	Unit: mm	Capacity (ℓ)
EA/DMS-15	215	110	102.5	15	65	50	24	8.2	73.1	89.1	23	2	1.3	0.4
EA/DMS-20	280	145	135	20	80	59	30	10.2	104	120	26	2	2.2	0.8
EA/ER/DMS-25	350	180	167.5	25	95	70	38	12.2	143	159	28	2	3.3	1.6
EA/ER/DMS-30	450	230	215	30	120	88	48	12.2	174.7	190.7	36	2	5.4	3.5
EA/ER/DMS-38	540	280	260	40	150	109	58	16.2	216	232	45	2	8	6
EA/ER/DMS-45	650	335	310	50	185	135	72	16.2	282.5	298.5	54	3	16	10

Model	Dia. approx.	A	A'	B	H	h	P	ϕd	ϕD	ϕE	G	T	Unit: mm	Capacity (ℓ)	
ER-55B	750	390	358	64	240	193	96	25	288.5	318.5	309.2	78	3	26	17
ER-65B	850	445	405	80	306	236	120	25	373	406.4	397.2	88	3	37	20
ER-75B	950	495	455	80	346	256	130	25	477.8	508	498.7	99	3	47	25

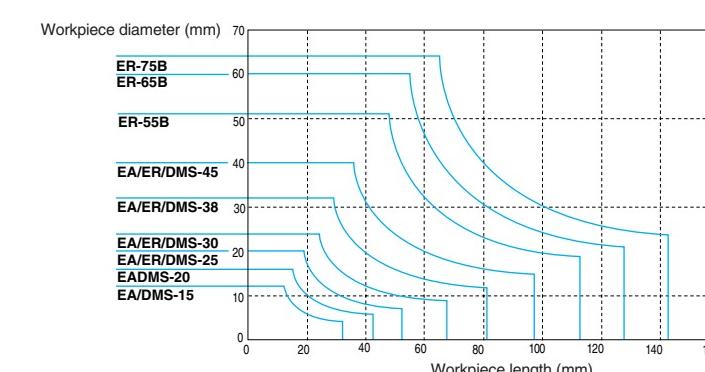
Notes 1) Bowls are made of stainless steel.

2) Bowls available with clockwise or counter-clockwise orientation.

3) Capacity varies according to the type of workpiece.

*When supplied unprocessed, neither inside nor outside has been surface-treated.

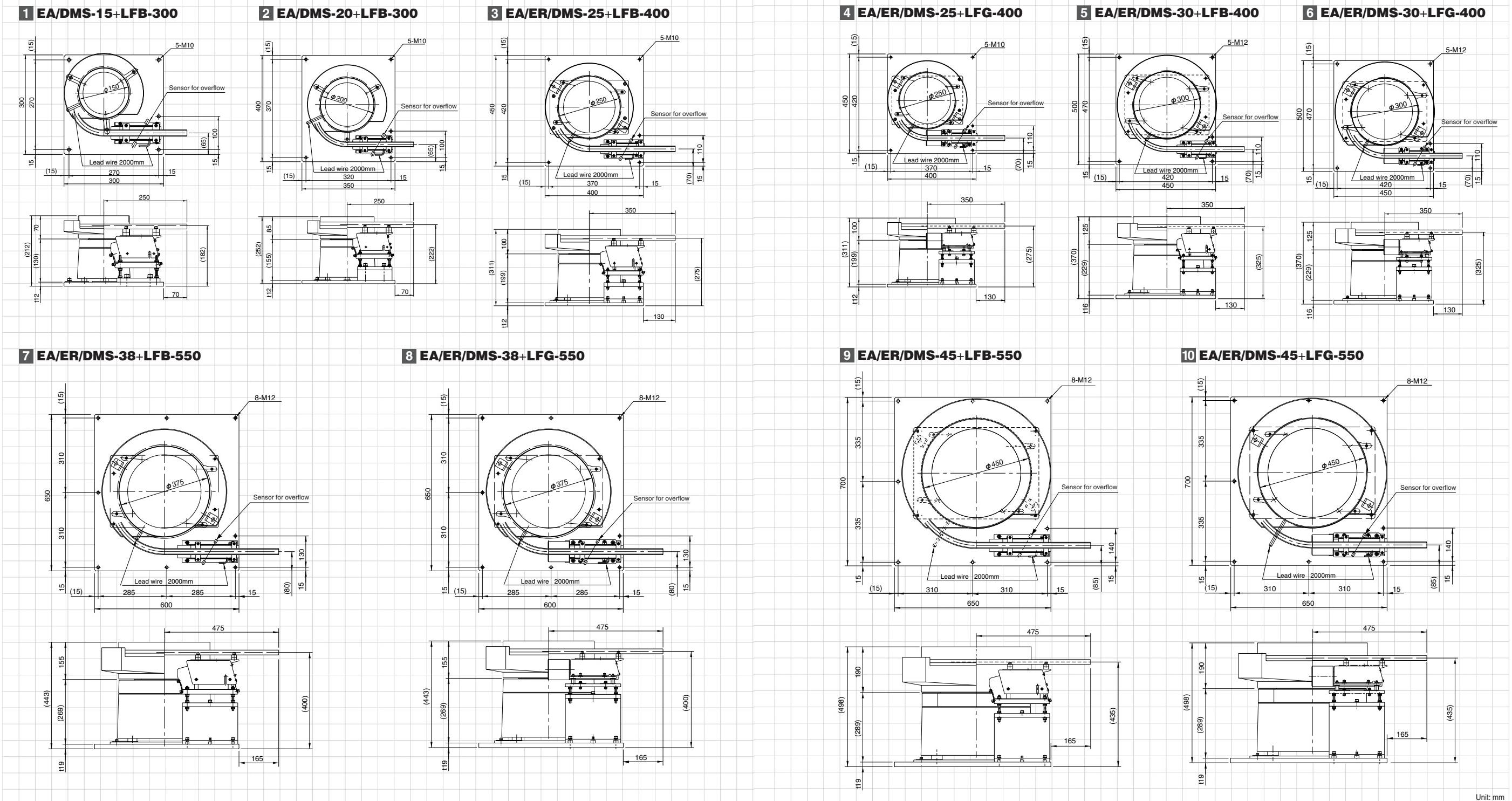
Cascade Bowl Selection Guide



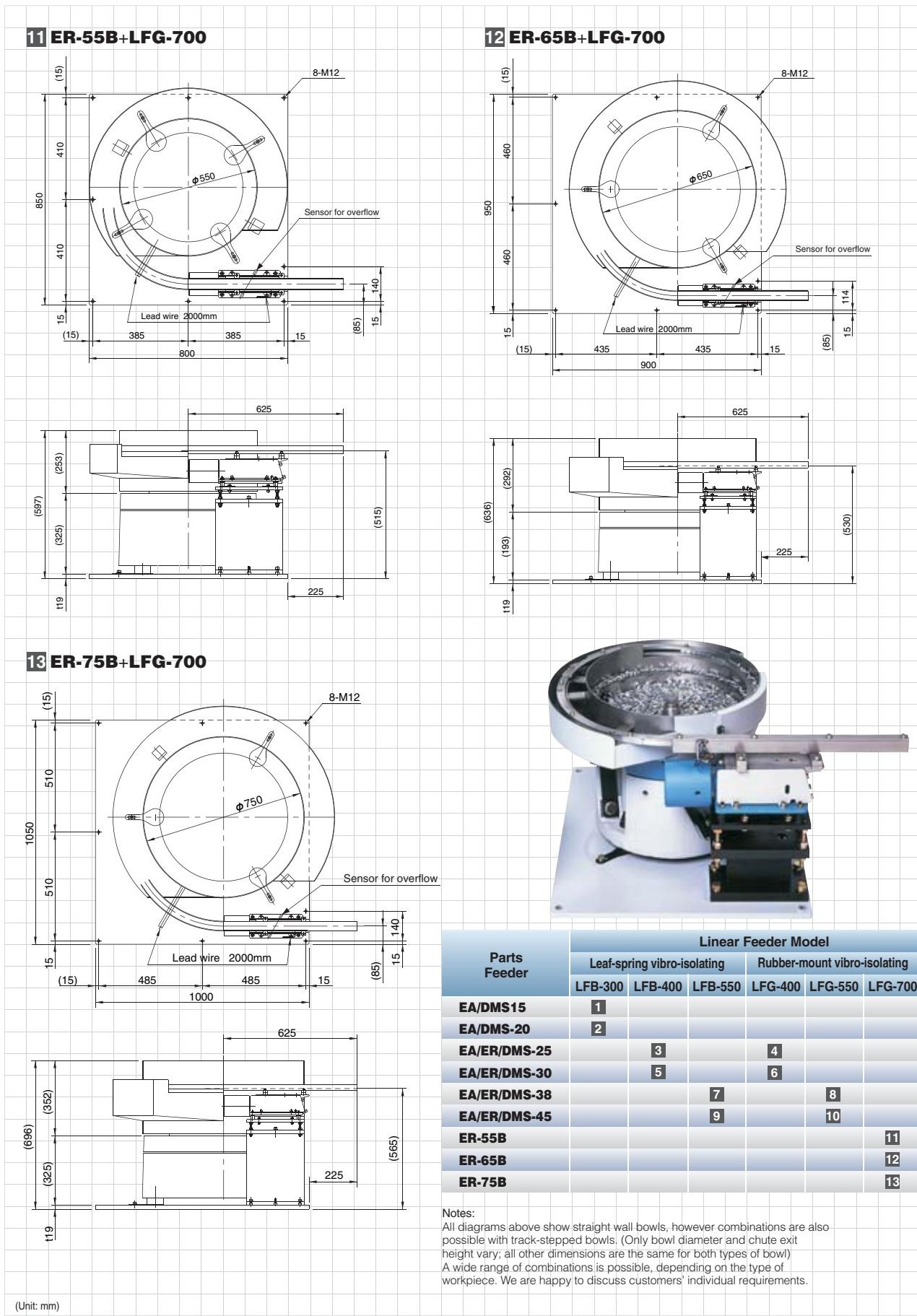
Linear Feeder Combinations EA/ER/DMS series

PARTS FEEDERS

PARTS FEEDERS



Unit: mm

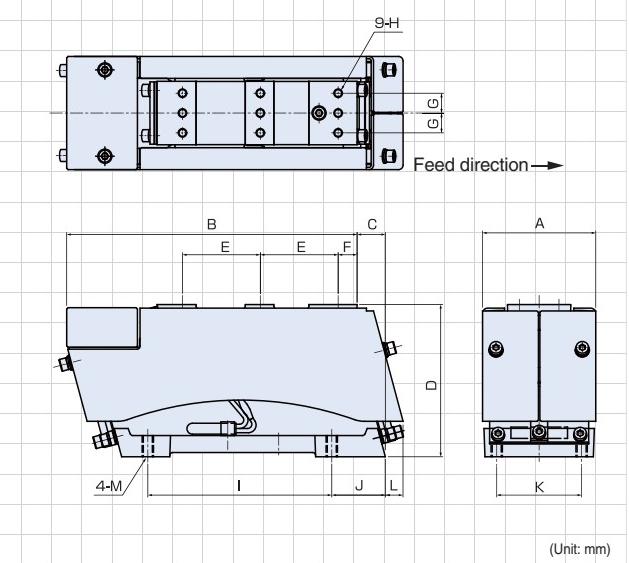


Low-reaction force linear feeder with less floor reaction

A leaf-spring vibro-isolating type linear feeder with reduced floor reaction. We enabled low-reaction force, high accuracy and smooth parts conveyance through our review of the drive unit mechanism in detail.



LFBR-350/450/600 Dimensions



Features

•Floor reaction force reduce design

By reviewing the drive unit mechanism, floor reaction force has been drastically reduced, compared with the existing leaf-spring vibro-isolating type.

•Leaf spring and Core gap adjustment are unnecessary

No troublesome leaf-spring adjustment or even core gap adjustment is necessary, by using the available C9, C10 series variable frequency digital controllers.

•No vibrational interference

Because of the middle frequency vibration range (between Full and Half wave), vibrational interference will not occur, when used in combination with other parts feeders.

•Uniform chute vibration angle

The entire chute vibration angle become uniformly, and has improved the parts conveyance become much more smoothly.

•Low power consumption

Driven near the resonance range enable to gain sufficient stroke in low current.

Specifications

Model	LFBR-350	LFBR-450	LFBR-600
Rated voltage	V	200	
Rated current	A	0.12	0.14
Vibration frequency	Hz	85~120	75~100
Drive unit weight	kg	3.5	5.5
Leaf-spring angle	degree	12	15
Max. amplitude	mm	0.60	0.65
Compatible controller	AC200V Single Twin	C10-1VF/1VFEF C9-3VFT-2C	
	AC100V Single Twin	C10-1VF/1VFEF+C10-TR C9-3VFT-1C	

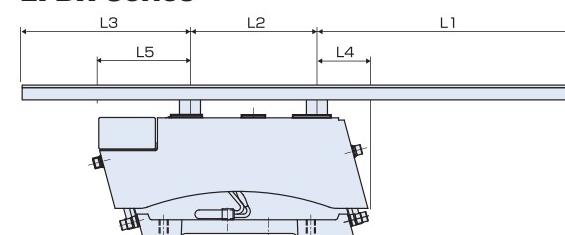
Dimensions Chart

Model	A	B	C	D	E	F	G	H	I	J	K	L	M
LFBR-350	70	170.5	12	93.5	45	13	12	M5	110	21	55	14	M8
LFBR-450	80	205	20	107.5	55	13	14	M6	130	38	60	13	M8
LFBR-600	95	274.5	25.5	133	75	16.5	19	M6	190	46	75	13	M10

Chute Specifications, including Overhang

Model	Max. length	Max. width	Min. thickness	Weight range (kg)	Basic position (at max. chute length)				
					L1	L2	L3	L4	L5
LFBR-350	350	40	9	0.4~1.2	110~150	90	30~110	39	67.5
LFBR-450	450	45	12	1.2~2.3	150~190	110	70~150	46	82
LFBR-600	600	55	14	2.3~4.0	200~250	150	90~200	55	108

LFBR Series



LFB Series – Leaf-Spring Vibro-Isolating Type

Uniform vibration with no need for adjustment

Use of a variable frequency controller eliminates the need for leaf-spring and core-gap adjustments. Provides uniform vibration with no adjustments necessary, and is easily installed to link up with other equipment, greatly improving ease of use. Can accommodate heavier chute weights and longer overhangs, to widen scope for applications. The drive unit is slim, and with virtually no vibration interference it can easily be combined with parts feeders, to suit wide-ranging combinations. The three models in this series can be used selectively to handle all sizes and shapes of workpiece.



Features

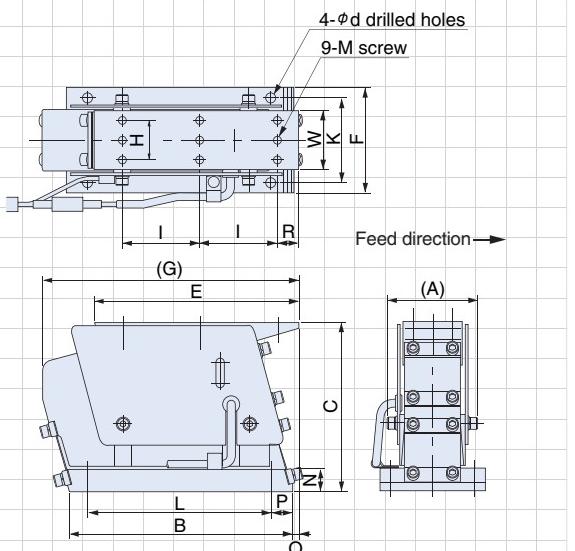
- Simple, uniform vibration

Use with heavier chutes and longer overhangs opens a wider range of applications. Consistent, uniform vibration is supplied without the need for adjustment.

- Energy saving type

Energy consumption cut by half, compared with our earlier models.

LFB-300/400/550 Dimensions



Specifications

Model	LFB-300	LFB-400	LFB-550
Rated voltage	V	200	
Rated current	A	0.04	0.08
Vibration frequency	Hz	90~120	80~110
Drive unit weight	kg	3.0	5.0
Leaf-spring angle	degree		15
Max. amplitude	mm	0.6	0.65
			0.75
Compatible controller	AC200V	Single	C10-1VF
	Twin		C9-3VFT-2C
	AC100V	Single	C10-1VF+C10-TR
	Twin		C9-3VFT-1C

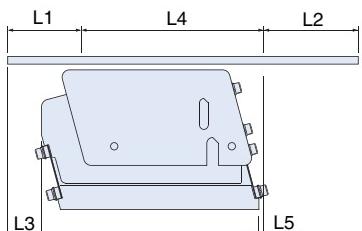
Dimensions Chart

Model	A	B	C	E	F	G	H	I	K	L	M	N	O	P	R	W	d
LFB-300	57	135	97	124	65	150	24	45	55	110	5	16	3	10	15	38	6
LFB-400	65	160	120	145	75	180	28	55	60	130	6	16	5	15	15	42	7
LFB-550	79	230	143	200	90	255	38	75	75	190	6	19	5	20	20	52	9

Chute Specifications, including Overhang

Model	Max. length	Max. width	Min. thickness	Weight range (kg)	Basic position (at max. chute length)				
					L1	L2	L3	L4	L5
LFB-300	300	50	6	0.4~1.0	66	110	40	124	3
LFB-400	400	50	10	0.8~2.0	105	150	70	145	5
LFB-550	550	65	14	1.4~3.5	140	210	85	200	5

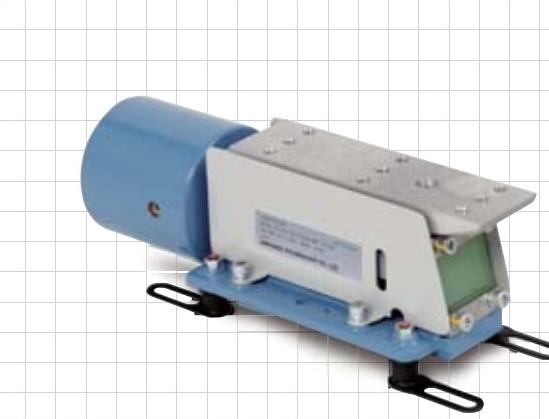
LFB Series



LFG Series – Rubber Mount Vibro-Isolating Type

Accommodates a wide range of chutes for ideal conveyance

The variable frequency controller installed as standard eliminates need for leaf-spring and core-gap adjustments. Easy installation and coordination make it much easier to use, and by adjusting position of the rear-end weight, conveyance irregularities can be quickly and easily eliminated. With minimal lateral movement, there is virtually no vibration interference, making it easy to combine with parts feeders for stabilized delivery. The three models in this series allow a full range of equipment combinations, and cover all shapes and sizes of workpiece. A leaf-spring vibro-isolating type linear feeder with reduced floor reaction. We enabled low-reaction force, high accuracy and smooth parts conveyance through our review of the drive unit mechanism in detail.



Features

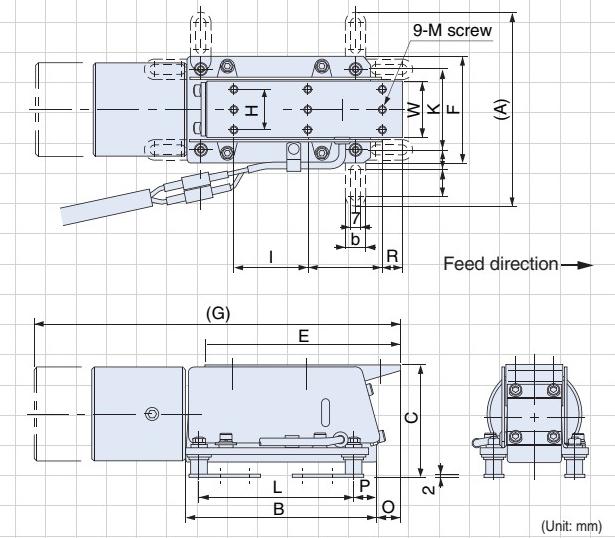
- Simple, uniform vibration

Use with heavier chutes and longer overhangs opens a wider range of applications. Adjustment is made by positioning the rear-end weight, so conveyance can easily be kept uniform without expert skills.

- Energy saving type

Energy consumption cut by half, compared with our earlier models.

LFG-400/550/700 Dimensions



Specifications

Model	LFG-400	LFG-550	LFG-700
Rated voltage	V	200	
Rated current	A	0.08	0.15
Vibration frequency	Hz	80~110	75~100
Drive unit weight	kg	4.3	8.5
Leaf-spring angle	degree		15
Max. amplitude	mm	0.65	0.75
			0.9
Compatible controller	AC200V	Single	C10-1VF
	Twin		C9-3VFT-2C
	AC100V	Single	C10-1VF+C10-TR
	Twin		C9-3VFT-1C

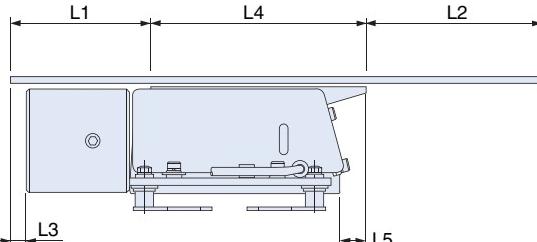
Dimensions Chart

Model	A	B	C	E	F	G	H	I	K	L	M	O	P	R	w	b	i	n
LFG-400	145	142	84	145	80	230~270	28	55	60	115	6	18	17	15	42	15	20	15
LFG-550	181	202	104	200	100	315~375	38	75	75	165	6	21	22	20	52	20	25	17.5
LFG-700	191	257	114	250	110	400~460	46	90	85	215	6	22	27	25	61	20	25	17.5

Chute Specifications, including Overhang

Model	Max. length	Max. width	Min. thickness	Weight range (kg)	Basic position (at max. chute length)				
					L1	L2	L3	L4	L5
LFG-400	400	50	10	0.8~2.0	105	150	70	145	5
LFG-550	550	65	14	1.4~3.5	140	210	85	200	5
LFG-700	700	75	16	2.2~5.5	180	270	30	250	22

LFG Series



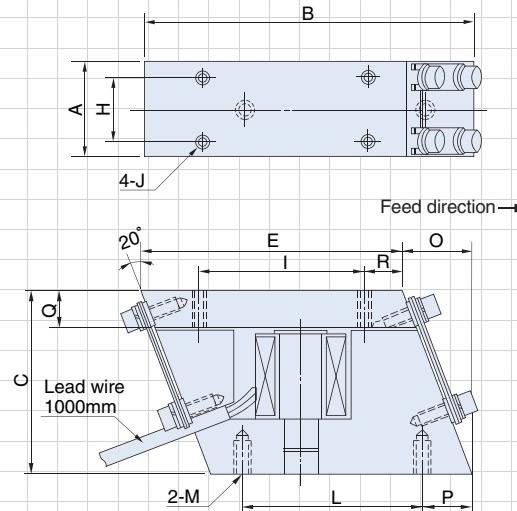
LF Series – Direct Mount Type

Simple and compact. Handles a wide range of micro-sized and precision parts

Developed for stabilized delivery of non-specialized micro-sized and precision parts, this series uses a small, electromagnetic drive unit that is simple and compact. Unmounted, with full wave operation to give excellent conveyance capacity for small volumes of non-specialized micro-sized workpieces. Maintenance is very straightforward and minimizes costs.



LF-02/04 Dimensions



Features

- Handles a wide range of small parts
- Handles a wide range of non-specialized micro-sized, precision parts
- Simple and low cost
- Provides a simple, low-cost solution for small-volume applications.
- Easy, convenient installation
- Compact design allows easy, convenient installation.

Specifications

Model	Rated Voltage (V)	Rated Current (A)	Vibration frequency (Hz)	Weight (kg)	Standard compatible controllers
LF-02	100/110	0.12	100-180	0.42	
LF-04	100/110	0.22	100-180	0.95	C10-1VF/1VFEF

Dimensions Chart

Model	A	B	C	E	H	I	J	L	M	O	P	Q	R
LF-02	22	approx. 81	44.3	65	15	40	M3	40	M4	16	15	9	10
LF-04	32	approx. 101	57.3	80	20	50	M4	55	M5	21	15	12	12

Chute Specifications

Compatible linear feeder	Maximum length	Maximum width	Weight (kg)
LF-02	200	20	0.2
LF-04	300	30	0.4

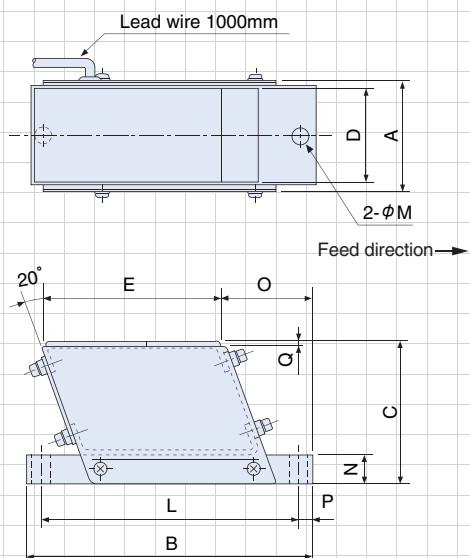
MF Series – Direct Mount Type

Compact yet powerful, for speedy delivery and versatile, longer distance conveyance

A new type of electromagnetic drive unit ideal for use with chutes handling very small, flat, and precision parts. Takes full advantage of merits of half wave operation for smooth conveyance of fragile and easily damaged workpieces.



MF-04B/15B Dimensions



Features

- Compact yet powerful
- Small unit size with half wave operation capable of longer distance conveyance.
- Speedy delivery, and versatile, longer distance conveyance
- High vibration frequency and amplitude give speedy delivery, and can meet a range of longer distance conveyance requirements
- Easy, convenient installation
- Compact design takes up little space and allows easy, convenient installation.

Specifications

Model	Voltage (V)	Current (A)	Vibration (Hz)	Weight (kg)	Standard compatible controllers
MF-04C	100/110 200/220	0.13 0.065	50-90	0.6	
MF-15C	100/110 200/220	0.2 0.1	50-90	1.8	C10-1VF/1VFEF

Dimensions Chart

Model	A	B	C	D	E	L	M	N	O	P	Q
MF-04C	46	106	56	38	62	88	7	9	38	9	3.2
MF-15C	56	160	78	52	100	144	9	16	52	8	3.2

Chute Specifications

Compatible linear feeder	Maximum length	Maximum width	Weight (kg)
MF-04C	300	35	0.4
MF-15C	450	45	1.5

Note: Chute must straddle drive unit to distribute weight.

Swift, stable conveyance of high volumes of large workpieces

Large-capacity electromagnetic drive unit has strong coil springs positioned at front and rear, and drive controlled by amplitude angle adjustment, to give speedy, steady, straight-line delivery of large-sized workpieces. The low-floored half-wave drive provides uniform amplitude and vibration frequency to eliminate irregularities during high-volume conveyance of large workpieces.



Features

- Large size feeder provides smooth workpiece delivery

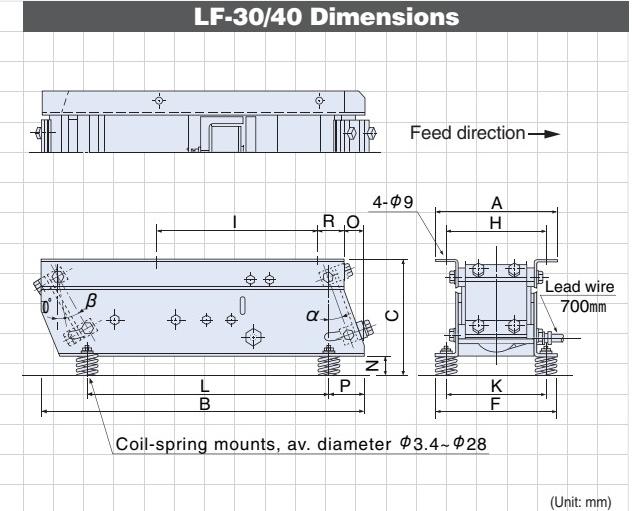
Large, vibro-isolating feeder that keeps the flow of workpieces smooth through adjustment of leaf-spring angle.

- Fast, stable delivery of high volumes of large workpieces

Extremely high conveyance efficiency allows high-volume delivery of large workpieces.

- Dial control for free adjustment of conveyance speed

By changing the vibration frequency and amplitude with the dial control, delivery speed can be freely adjusted.



Specifications

Model	Leaf-spring adjustment angle		Rated voltage (V)	Rated current (A)	Vibration frequency (Hz)	Weight (kg)	Standard compatible controller
	α	β					
LF-30	0°~20°	10°~30°	200/220	1.5	50-90	25	C10-3VF/3VFEF
LF-40	0°~20°	10°~30°	200/220	1.6	50-90	33	

Dimensions Chart

Model	A	B	C	F	H	I	K	L	N	O	P	R
LF-30	182	410	162	180	156	190	150	295	30	30	55	40
LF-40	196	500	177	186	166	250	154	375	30	30	55	40

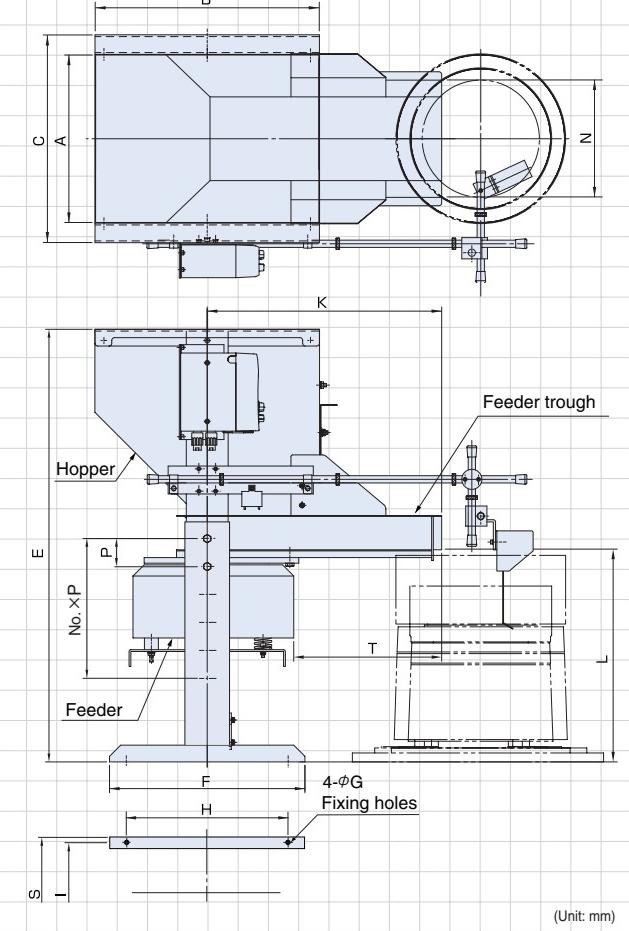
Chute Specifications

Applicable linear feeder	Maximum length	Maximum width	Weight (kg)
LF-30	650	120	3.5
LF-40	750	150	5.5

Note: Chute must straddle drive unit to distribute weight.



15/30/60/100-liter Hopper Dimensions



Features

- By attaching a feeder to a hopper, parts delivery is extremely smoothly accomplished and running noise is kept extremely low.

Dimensions Chart, including Feeders

Hopper capacity (ℓ)	model	Compatible Parts feeders	Permissible weight of work (kg)	A	B	C	E	F	G	H	I	K	L (1)	N	Sliding base No. x P	S	T	Weight (kg)		Electromagnetic feeder	
				EA-25	ER-25B	EA-30	ER-30B	EA-25	ER-25B	EA-30	ER-30B	EA-38	ER-38B	EA-45	ER-45B	ER-55B	ER-65B	Feeder model	Rated current (A)		
15	HPF-15-3815B	EA-25	24	250	350	322	675~875	320	7	270	275	380	380~580	150	5 x 50	310	225	46	CF-2	0.5	
		ER-25B																			
		EA-30																			
		ER-30B																			
		EA-25	24	300	400	372	775~975	350	7	290	325	420	380~580	150	5 x 50	360	265	50	CF-2	0.5	
		ER-25B																			
		EA-30																			
30	HPF-30-4215B	ER-30B																			
		EA-38																			
		ER-38B																			
		EA-45																			
		ER-45B																			
		ER-55B	56	450	600	553	865~1215	500	9	400	480	600	430~780	300	8 x 50	536	355	140	CF-3	1.0	
		ER-65B																			
60	HPF-60-6030B*	ER-55B																			
		ER-65B																			
100	HPF-100-6030B*	ER-55B																			
		ER-65B																			

Notes *1 Hoppers come in stainless steel only.

*2 Vibration frequency: 50~70 Hz; rated voltage: 200/220 V; compatible controller: C10-1VFEF. (No standard model with 100/110 V specifications.)

*3 Paint finish: Munsell N7.5

*4 For 15- and 30-liter hoppers, hopper heights come in 5 levels at 50 mm intervals; for 60- and 100-liter hoppers, hopper heights come in 8 levels at 50 mm intervals.

*5 Heavy-duty 60- and 100-liter hoppers (permissible total work weight 112 kg) are available as non-standard models.

* Manufactured to order.

C10 Series – Variable Frequency Digital Controllers

Digital control operated in ‘Analog way’

A completely new type of digital controller that can be used with the full line-up of feeders, from high frequency mini parts feeders to small electromagnetic feeders and large size models. With ‘analog-style’ operation it can be adjusted very swiftly.

With an auto-tuning function that eliminates the need for frequency adjustment, and convenient digital settings and display, drive units can be operated to their full potential.



CE RoHS

Features

- Auto-tuning function eliminates leaf-spring adjustment (C10-1VFEF, 3VFEF)

This digital equipment has a special advanced vibration frequency auto-tuning function. It automatically tracks resonance point changes not only from changes to input volume of workpieces, but also from mechanical changes over time, to deliver optimal vibration at all times. No leaf-spring adjustment or even frequency adjustment is necessary, thereby boosting operation efficiency and saving energy.

- Digital setting and display makes settings easy to manage.

Amplitude, drive frequency, output voltage notches are all set and displayed digitally, for easy management.

- Constant amplitude control matched to workpieces or materials (C10-1VFEF, 3VFEF, 5VFEF)

Amplitude can be set digitally, and an amplitude sensor allows drive at constant amplitude suited to the workpieces under conveyance.

- Easy-to-use panel design

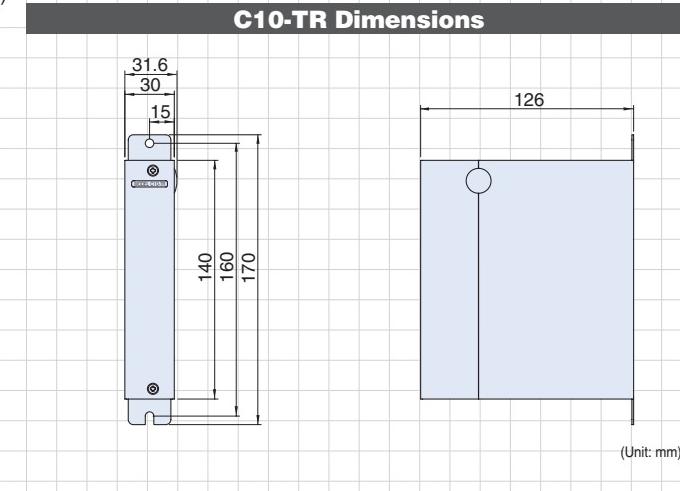
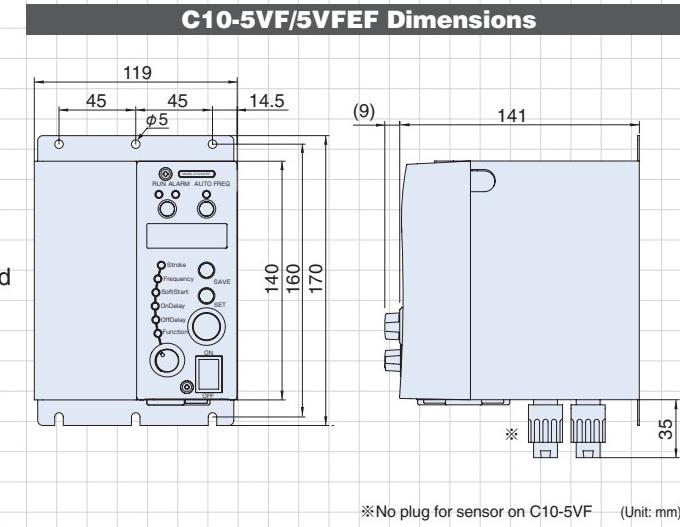
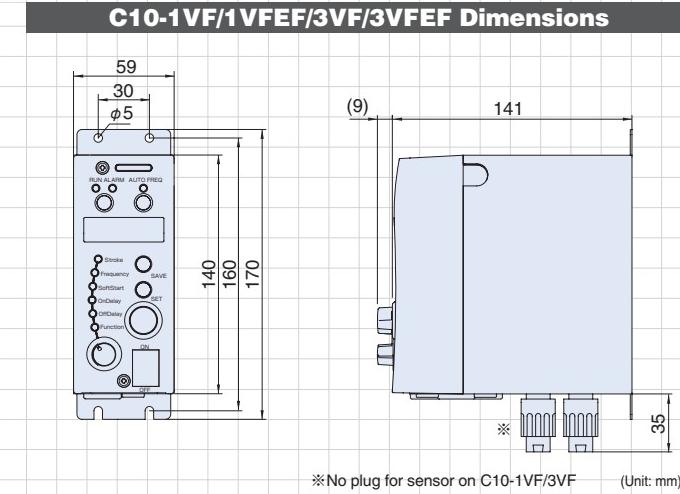
The frequency, voltage, soft start, on delay and off delay settings needed for parts feeder adjustment are located on a control panel. A rotary encoder allows ‘analog-style’ setting input to be changed to digital values.

- Many external control functions

Choice of four speeds can be made by external signal. Two-step control through external regulating resistance. External volume adjustment via a DC4-20mA signal is also possible.

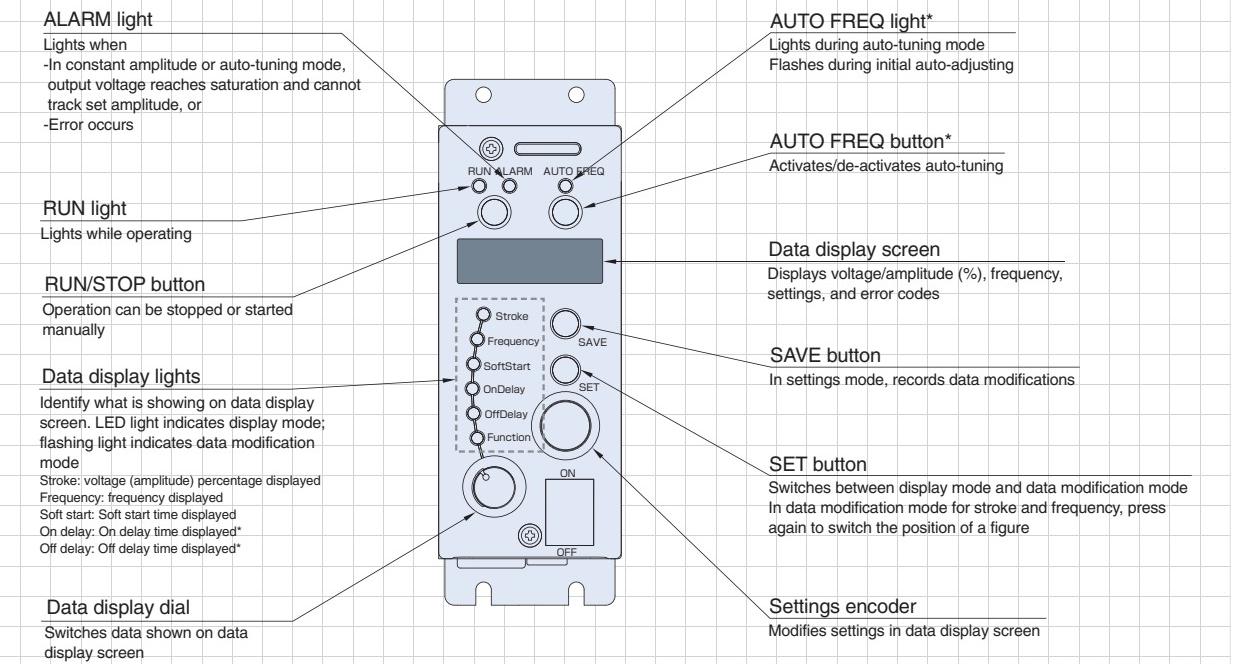
- CE Marking conformed product

Required to be installed inside the control box treated with Noise filter and IP4X to make product comply to CE Marking.



By using a C10-TR power transformer unit with a standard controller, output voltage can be boosted to run an AC 200 V parts feeder from an AC 100 V power source.

C10 Series Parts & Functions



Specifications

Model	C10-5VF	C10-3VF	C10-1VF	C10-5VFEF	C10-3VFEF	C10-1VFEF	
Input power source	AC100~120V±10%, 50/60Hz	AC200~230V±10%, 50/60Hz					
Output	Control system	PWM system					
	Voltage	0~190 V (for AC 200V input) 0~95 V (for AC 100V input)					
	Vibration frequency	Optional unit C10-TR allows output voltage in 0~190V range (Except C10-5VF(EF)) even with AC100V input	Half wave: 45~90 Hz, Full wave: 90~180 Hz	Intermediate wave: 65~120Hz, High frequency: 180~360 Hz			
Operating Modes	Max. current	5A	3A	1A	5 A	3A	
	Constant voltage mode			Frequency, output voltage set manually			
	Constant amplitude mode			—	Constant amplitude control at set frequency		
	Auto-tuning mode			—	With frequency auto-tuning, constant amplitude control requires no amplitude setting		
Additional features	Speed selector			Selection of up to 4 amplitude settings by means of external signal			
	Start/stop control			Start/Stop control by external signal			
	Output signal			Output signal synchronized to parts feeder operation			
	Soft start			Start-up time 0.2~4.0 secs			
	On/Off delay			—	Delay 0.2~60secs		
	Sensor power source			—	For DC 12V, max. 80A 3P power plug		
	Function			—	Power output synchronized to parts feeder operation (RUN)		
	Control system			—	ON/OFF control		
Synchronized power output	Output voltage			—	As power source input to controller		
	Max. current			—	2A		
	Noise tolerant voltage				Above 1000 V		
Others	Ambient temperature				0~40°C		
	Ambient humidity				10~90% (no condensation)		
	Weight	1.5kg	0.9kg	0.8kg	1.6kg	1.0kg	
	Case color				U75-70D (Japan Paint Industry Association)	0.9kg	
Our compatible equipments	ER-55B,65B,75B	ER-30B,38B,45B EA-25,30,38,45 LF-30,40	ER-30B,38B,45B EA-25,30,38,45 LF-30,40	ER-25B EA-15,20 LFB-350,450,600 LFB-300,400,550 LFG-400,550,700 ME-08C,14C HME-08C,14 LFB-02,04 HLFB-02,04C LF-02,04 MF-04C,15C	ER-55B,65B,75B	ER-25B EA-15,20 LFB-300,400,550 LFG-400,550,700 ME-08C,14C HME-08C,14 LFB-02,04 HLFB-02,04C LF-02,04 MF-04C,15C	ER-25B EA-15,20 LFB-350,450,600 LFB-300,400,550 LFG-400,550,700 ME-08C,14C HME-08C,14 LFB-02,04 HLFB-02,04C LF-02,04 MF-04C,15C

C9 Series – Variable Frequency Digital Controllers

CONTROLLER

CONTROLLER

Digital Control Revolutionizes Parts Delivery

A revolutionary digital controller series for use with regular parts feeders for conveyance of parts of all sizes. Auto-tuning function eliminates need for frequency adjustment, and convenient digital settings and displays, etc. allow parts feeders to operate to their full potential.



Features

- Auto-tuning function eliminates need for frequency adjustment

This digital system has an advanced frequency auto-tuning function. It automatically tracks resonance point changes resulting from mechanical? changes over time, regardless of changes to the volume of workpieces, to deliver optimal vibration at all times. There is no need for leaf-spring adjustments, and even frequency adjustment is unnecessary. This keeps the equipment activated much more of the time and saves energy.

- Digital setting/display makes settings easy to manage

Amplitude, drive frequency, output voltage notches are all set and displayed digitally, making them easy to manage.

- Constant amplitude control matched to workpieces

With digital setting of amplitude, an amplitude detection sensor allows drive at a constant amplitude suited to the workpieces under conveyance.

- Complete control possible with a single controller

Control of both a parts feeder and linear feeder is possible with a single controller.

- Soft start settings can be adjusted up to 4 seconds

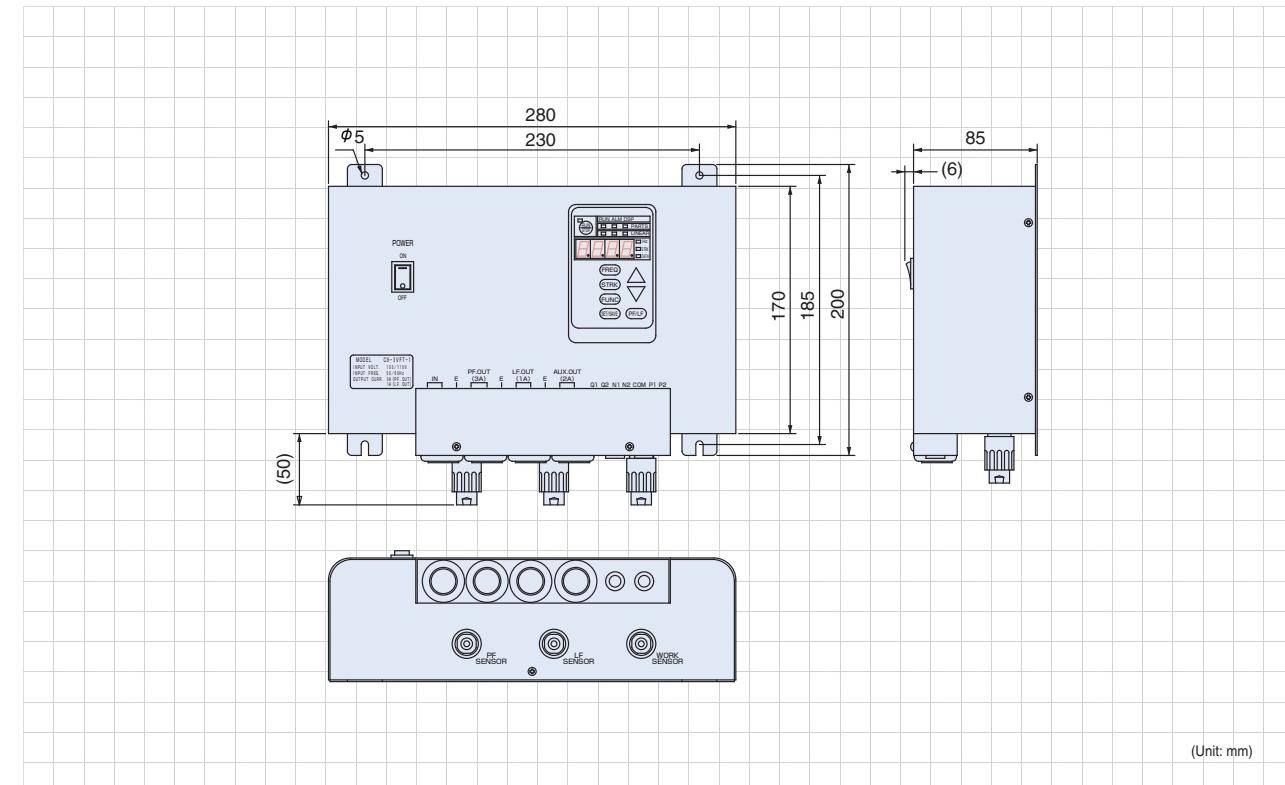
- On-off delay time can be adjusted up to 60 seconds

- Changes to button labels

- Changes to function displays

- Case color changed to that of C10 series

C9-3VFT-2C/C9-3VFT-1C Dimensions



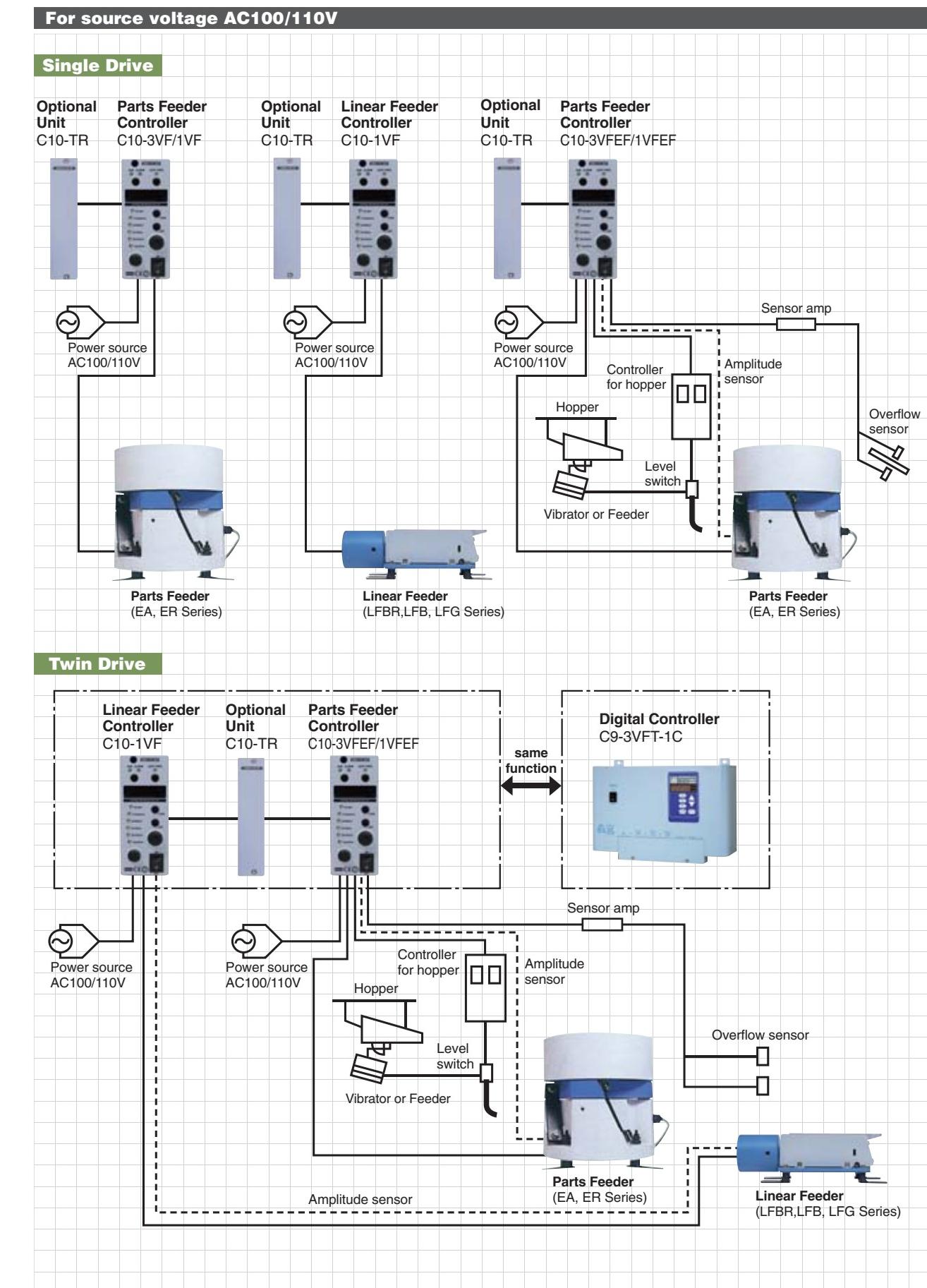
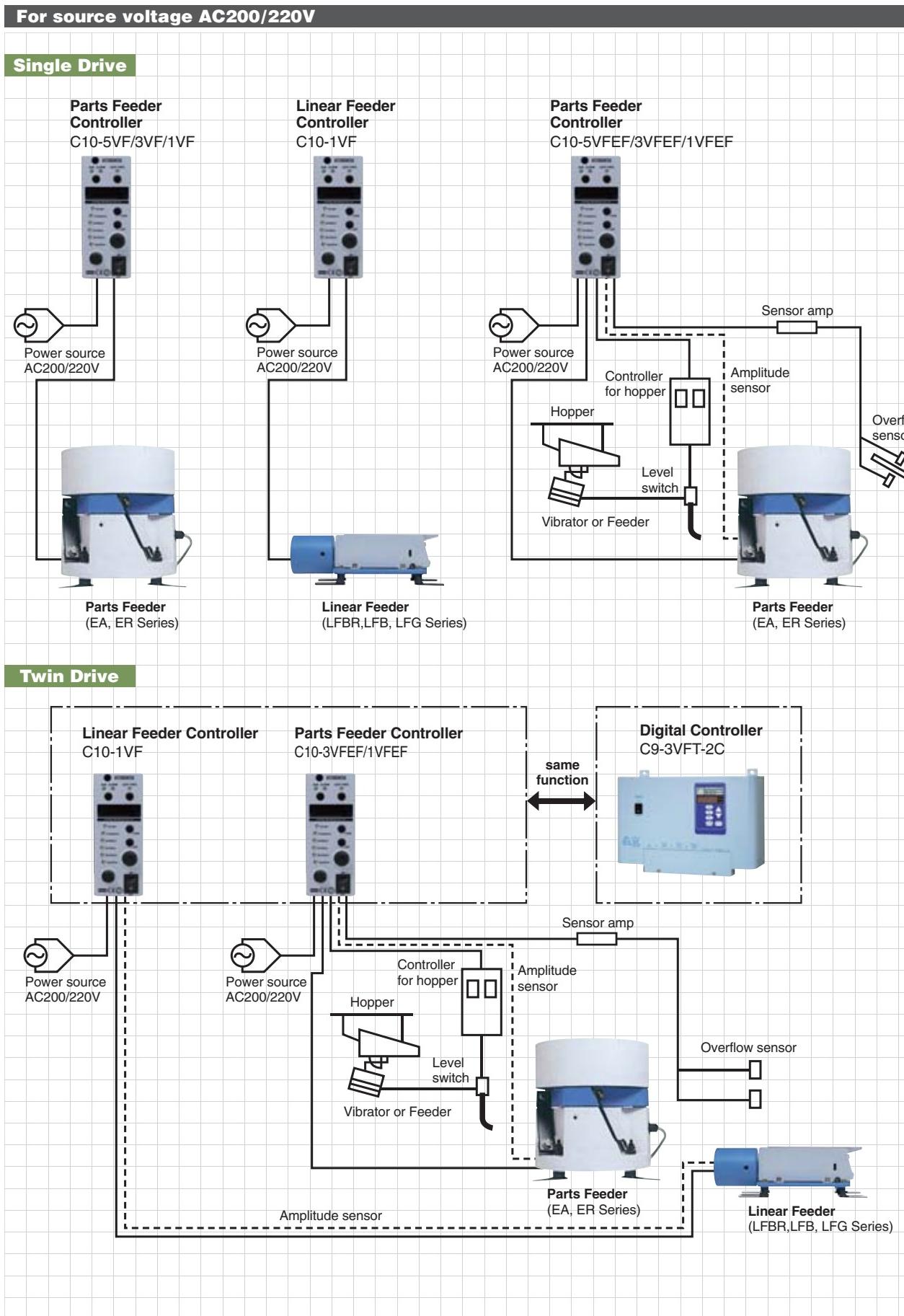
Specifications

Model	C9-3VFT-2C		C9-3VFT-1C	
Input Power source	AC200/220V 10%, 50/60Hz			AC100/110V 10%, 50/60Hz
Control system	PWM system			
Output	Voltage			0~190V
	Vibration frequency	Parts feeder	49~90Hz	65~120Hz
		Linear feeder	90~180Hz	180~360Hz
Operating modes	Maximum current	Parts feeder	3A	
		Linear feeder	1A	
	Auto-tuning mode	Resonant frequency auto-tuning allows constant amplitude control with no need for frequency setting		
Additional features	Constant amplitude mode	Constant amplitude control at set frequency		
	Constant voltage mode	Frequency, output voltage set manually		
	Quick removal function	Temporary increase in PF amplitude to clear leftover workpieces, etc.		
	Speed selector	Selection of amplitude settings (up to 4) by means of external signal		
	Start/Stop control	Start/stop control by external signal		
	Output signal	Outputs signal tuned to parts feeder operation		
	Soft start	Start-up time 0.2~4.0 seconds		
	On/Off delay timer	Delay time 0.2~60.0 seconds		
	Sensor power source	3P power plug gives DC12V, max. 80A		
	Function	Power source output tuned to parts feeder operation (RUN)		
Tuned power source output	Control system	ON/OFF control by Triac		
	Output voltage	As power source input to controller		
	Maximum current	2A		
	Noise tolerant voltage	Above 1000V		
	Ambient temperature	0~40°C		
Conditions for use	Ambient humidity	10~90% (no condensation)		
	Case color	Japan Paint Industry Association U75-70D		
	Weight	2.3kg		
	Our compatible Parts feeders	EA-15/20/25/30/38/45, ER-25B/30B/38B/45B		
	Our compatible Linear feeders	LFBR-350/450/600, LFB-300/400/550, LFG-400/550/700		

Equipment Combinations

CONTROLLER

CONTROLLER



ME/HME/HSE series – High Frequency Mini Parts Feeders

High-speed, high-precision handling of micro-sized parts and electronic chips. Compact design and versatility to handle a wide range of small parts.

Designed for the automatic conveyance and stable delivery of delicate components that are easily scratched or damaged, these feeders provide high-speed, high-precision parts handling. With the fine vibration of full wave drive and a soft start function, all types of tiny parts for cameras, watches etc. can be handled. Compact design takes up minimal space.



Features

- Smooth, reliable, orderly presentation of tiny, thin parts

High vibration frequency and small amplitude allow for the orderly delivery of micro-sized, thin and complex-shaped parts, which is hard to achieve with conventional feeder vibration characteristics.

- Highly accurate sorting and conveyance

Bouncing of workpieces during conveyance is reduced, and even slight variations in shape and weight distribution of small parts can be detected for accurate sorting.

- No problems at connecting points

With little vibration displacement, there is no damage to workpieces caused by gaps between bowl and chute or chute and non-vibrating parts.

- High vibration frequency gives high speed delivery

High vibration frequency conveys workpieces smoothly, speedily and with no resistance, to supply a stable quantity with little variation, for a significant improvement in efficiency.

- No readjustment of leaf-spring necessary

Once set, leaf-spring requires no further adjustment. With feedback control for amplitude, changes over time in voltage or load do not cause fluctuations in vibration.

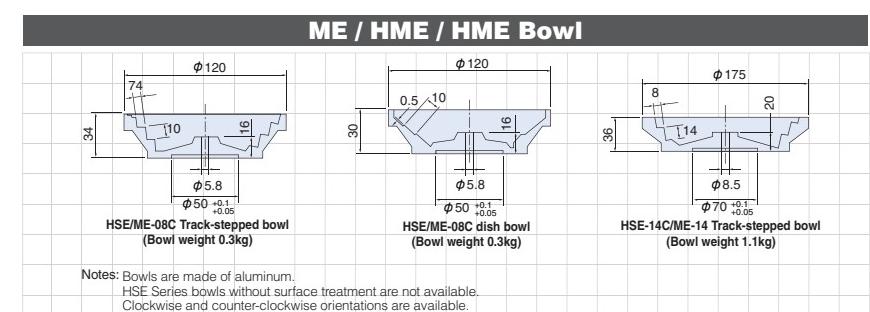
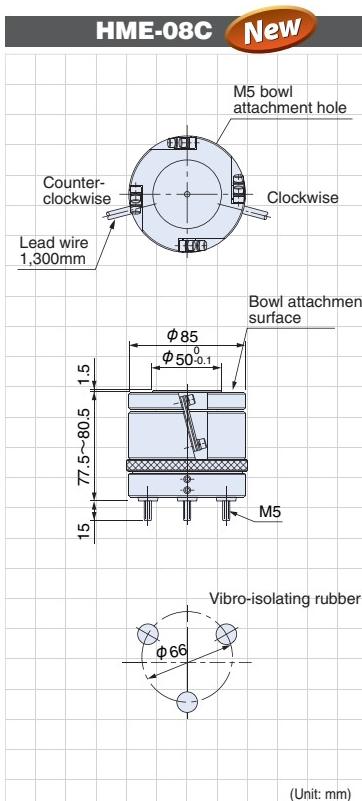
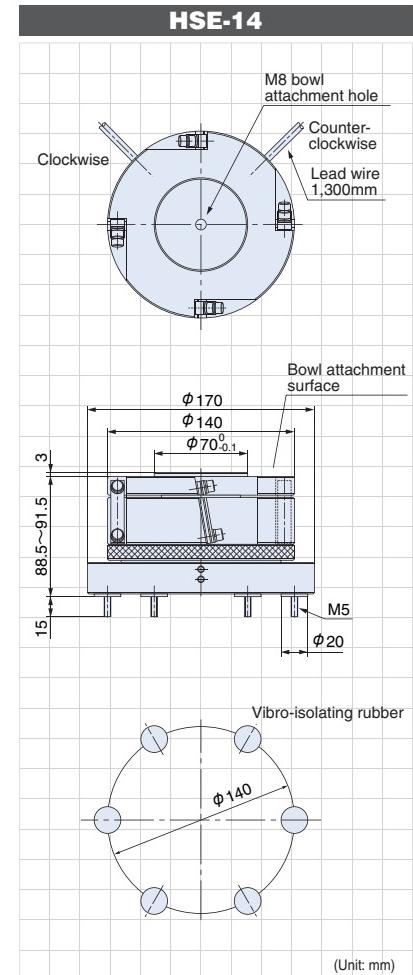
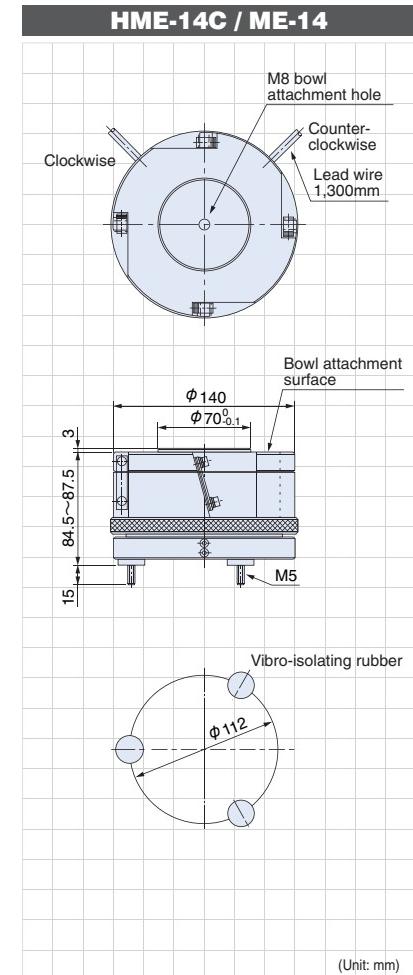
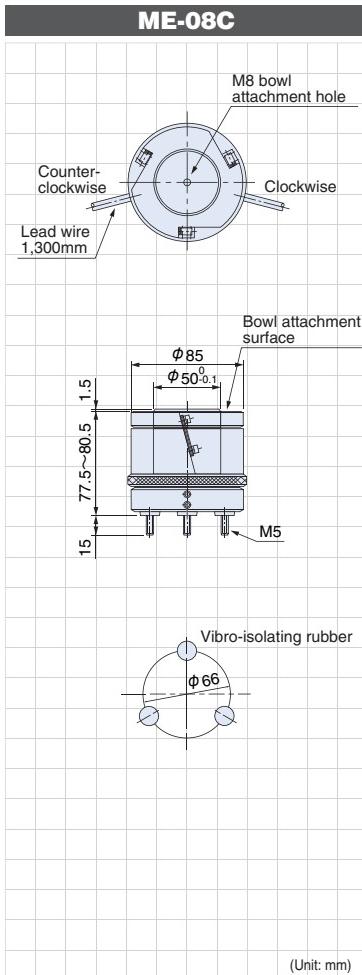
- Compact design, with a height adjustment function

Down-sized design for maximum space-saving, with a vibro-isolating base. Bowl height can be adjusted within 3 mm range to simplify positioning.

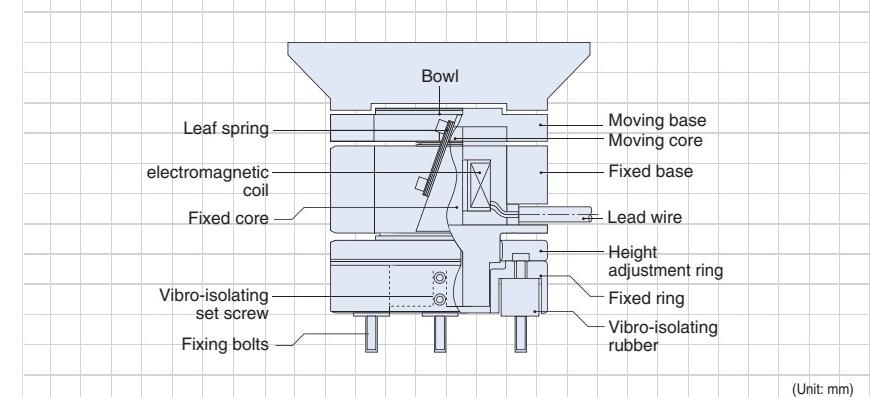
Specifications

Model	Rated Voltage (V)	Rated Current (A)	Vibration frequency (Hz)	Weight (kg)	Loaded weight (kg)	Max. bowl diameter (mm)	Compatible standard controller
ME-08C		0.30		2.5	0.6	φ140	
ME-14C		0.55	100~180	7.8	2.0	φ230	
HME-08C	100/110	0.15		2.5	0.6	φ140	C10-1VF C10-1VFEF C9-03VFTC
HME-14		0.30	220~360	7.8	2.0	φ230	
HSE-14		0.30		9.3	2.0	φ230	

Note: Loaded weight is permissible weight of bowl and work.



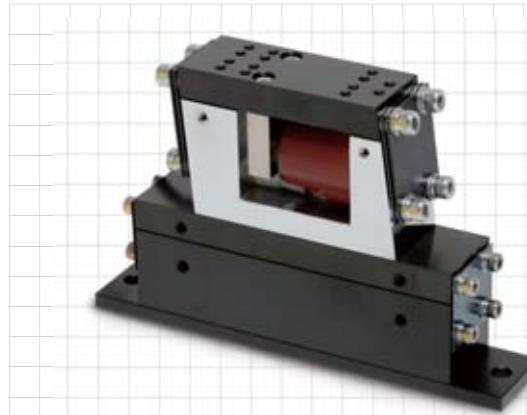
ME / HME / HME Structural Diagram



(Unit: mm)

Ideal vibration characteristics to cut bouncing

A high-precision electromagnetic drive unit ideal for use with chutes for precision parts, to meet present-day requirements for rapid processing of micro-sized workpieces. Vibro-isolating leaf-springs are installed front and rear to absorb rebound, and vibration characteristics can be adjusted to match the workpiece. Giving uniform vibration the whole length of the trough, this series provides smooth delivery of the most delicate, easily damaged parts with minimal bouncing.



Features

- Leaf-spring vibro-isolating type ideal for precision parts

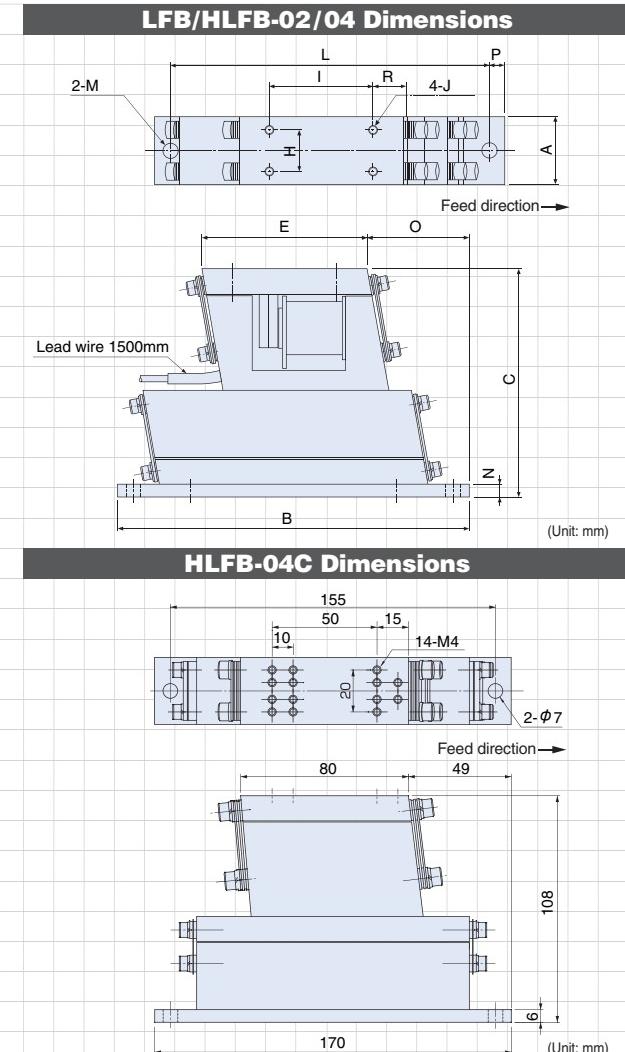
This leaf-spring vibro-isolating series is ideal for micro-sized, flat and precision parts.

•Minimizes bouncing

Adjustable vibration characteristics give increased delivery efficiency while minimizing workpiece bouncing.

•Compact and high precision

Compact unit accommodates demands for rapid processing, providing high precision conveyance of micro-sized and precision parts.



Specifications

Model	Rated Voltage (V)	Rated Current (A)	Vibration frequency (Hz)	Weight (kg)	Standard compatible controllers
LFB-02	100/110	0.12	100~180	1	
LFB-04	100/110 200/220	0.16 0.08	100~180	2.7	C10-1VF C10-1VFEF
HLFB-02	100/110	0.25	220~360	1	C9-03VFTC
HLFB-04C	100/110	0.30	220~360	2.7	

Dimensions Chart

Model	A	B	C	E	H	I	J	L	M	N	O	P	R
HLFB/LFB-02	22	130	86	65	15	40	M3	120	Φ6	4.5	45	5	13
LFB-04	32	170	108	80	20	50	M4	155	Φ7	6	49	7.5	15

Chute Specifications

Compatible linear feeder	Maximum length	Maximum width	Weight (kg)
HLFB/LFB-02	200	20	0.2
LFB-04	300	30	0.4
HLFB-04C	300	30	0.4

Note: Chute must straddle drive unit to distribute weight.

Digital Control for Revolutionary Delivery of Micro-sized Parts

This new digital controller represents a major advance in the control of high frequency mini parts feeders for delivery of electronic chips and other micro-sized parts. Auto-tuning makes frequency adjustment unnecessary, and with its convenient digital settings and display it enables high frequency mini parts feeders to be operated to their full potential.



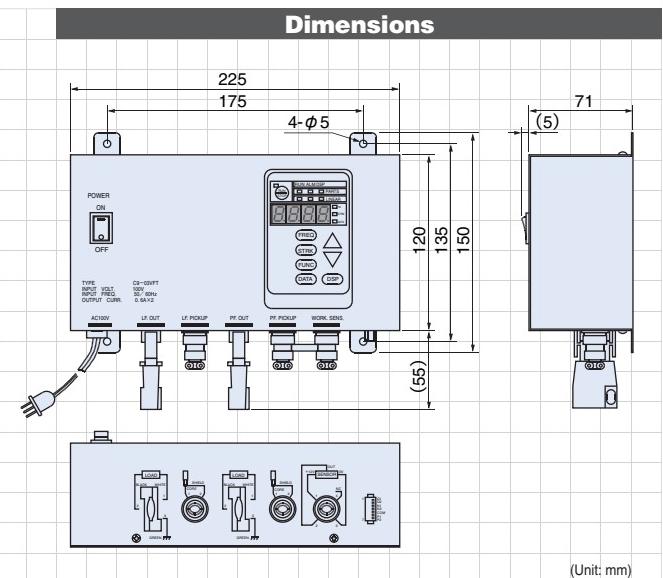
Features

- Auto-tuning function eliminates frequency adjustments

This digital equipment has an advanced vibration frequency auto-tuning function. It automatically tracks resonance point changes not only from variations in workpiece input volume, but also from mechanical changes over time, to deliver optimal vibration at all times. No leaf-spring adjustment or even frequency adjustment is necessary, thereby boosting operating efficiency and saving energy.

- Digital setting and display makes settings easy to manage

Amplitude, drive frequency, output voltage notches are all set and displayed digitally, for easy management.



- Constant amplitude control matched to workpieces

Amplitude can be set digitally, and an amplitude sensor keeps drive at a uniform amplitude suited to the workpieces under conveyance.

•One controller for all

One controller can control both parts feeders or linear feeders.

•Computerized control delivers optimal drive

Specifications

Model		C9-03VFTC											
Input Power source		AC100/110V 10%, 50/60Hz											
Control system		PWM system											
Output	Voltage	0~95V	Full wave: 100~180 Hz	High frequency: 220~360 Hz									
	Vibration frequency												
	Maximum current	0.6A											
Operating modes	Auto-tuning mode	Automatically senses particular vibration frequencies of parts feeder or linear feeder and controls drive at that frequency											
	Constant amplitude mode	Digital setting for amplitude											
Additional features	Start/Stop control	Amplitude controlled to be uniform by means of amplitude sensor											
	Overflow control	Start/stop control by external signal											
Others	Sensor power source	Sensor allows parts feeder overflow control											
	Output signal	On/off delay: Variable, 0.2~4.0 secs											
	Soft start	DC12V											
	Noise tolerant voltage	Output signal synchronized to operation											
	Ambient temperature	Variable, 0.5~2.0 secs											
	Ambient humidity	Above 1000V											
	Case color	0~40°C											
	Weight	10~90% (no condensation)											
	Our compatible Parts feeders	Beige (5Y7/1)											
	Our compatible Linear feeders	1.8kg											